CHNOLOGY DEPARTMENT

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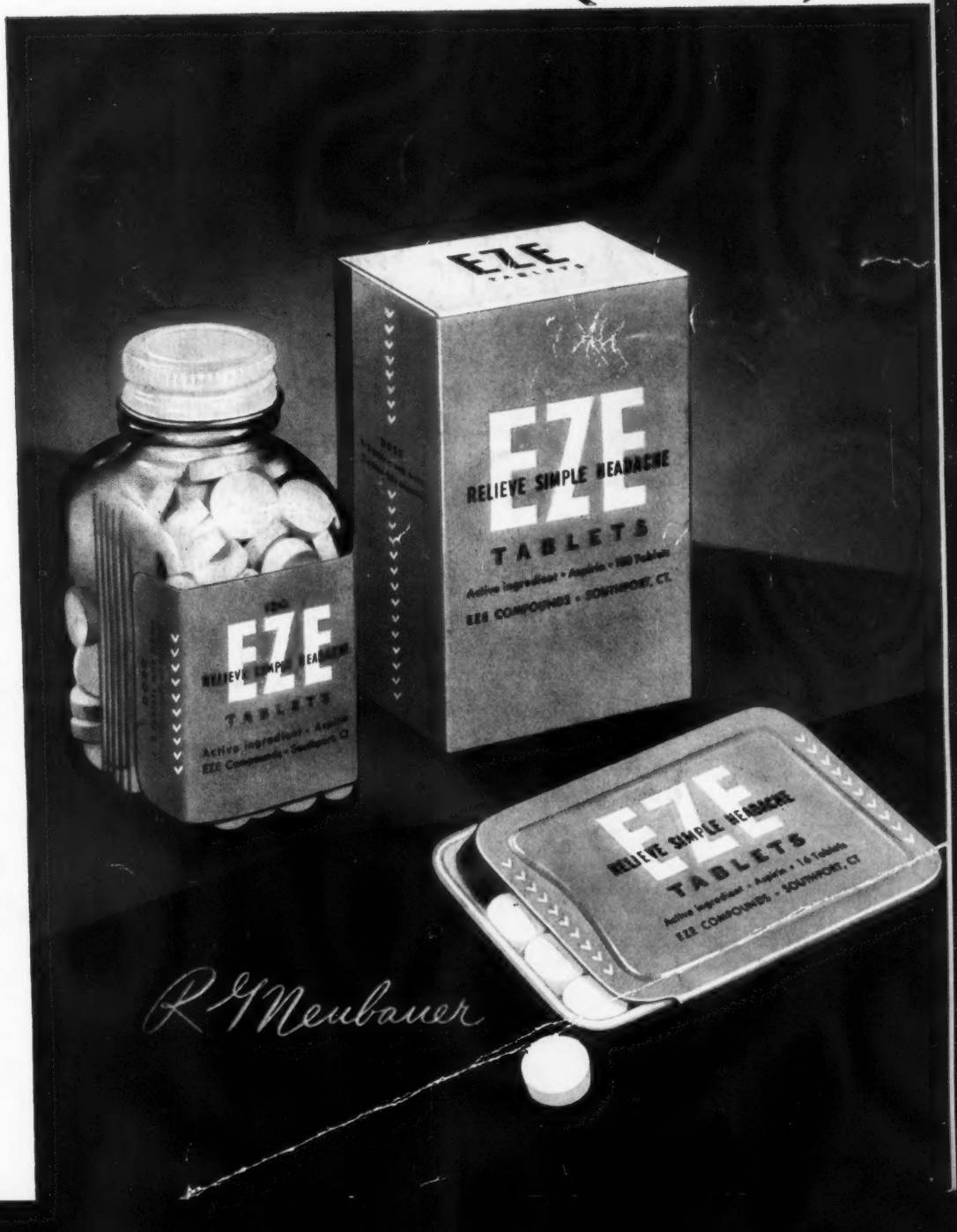
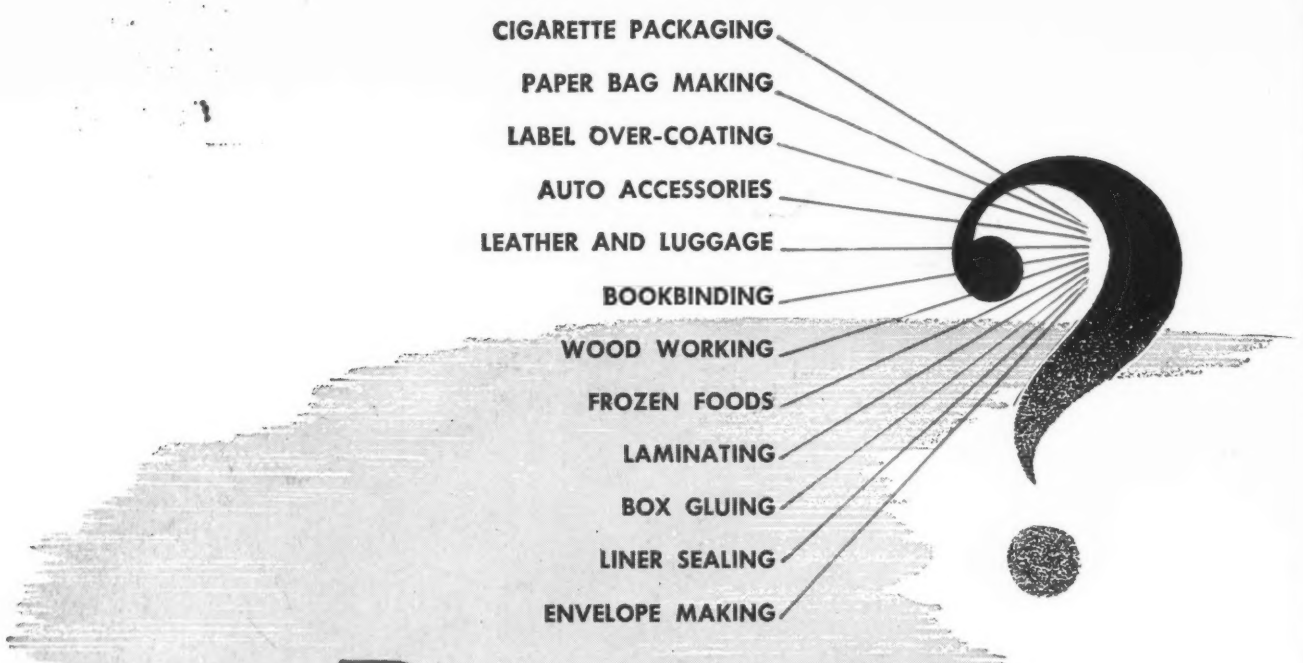
Modern packaging



For cover story see p.81

January 1948



"?" is the answer a Resyn adhesive

Each "RESYN" Adhesive is a complex blend that is designed to do a specific job exceedingly well. Many amazing developments have resulted from applying them to packaging, converting and assembling operations previously thought to be at their highest level of efficiency.

Why? Because "RESYN" adhesives provide higher resistance against all forms of moisture and temperature variations. They're vermin-proof, mould-proof, age-proof. They're economical. They increase production speeds, reduce supervision, offer greater versatility, spread and penetrate uniformly, and bring increased sales advantages to many products.

What are some uses? *In bag making:* for difficult stocks . . . breather action . . . moisture vapor barrier. *In luggage making:* for softness and pliability . . . resistance to fungus . . . laminating before shaping under heat and pressure. *In chemical packaging:* for all-purpose, all-weather labeling and overcoating on wood, fiber, painted steel, tin and glass. *In upholstering:* for adhering cloth to cloth, chipboard, wood, metal, wadding, etc.

A whole new world of uses is opening up for "RESYN" adhesives. They're readily available. So get acquainted with their types, properties, uses. All are quickly summed up by National Adhesive in an interesting booklet: When and How to Use "RESYN" Adhesives. Write for your copy — NOW!

Dunellen Plant

Offices: 270 Madison Avenue, New York 16; 3641 So. Washtenaw Avenue, Chicago 32; 735 Battery Street, San Francisco 11, and in other principal cities. In Canada: Meredith, Simmons & Co., Ltd., Toronto. In England: National Adhesives, Ltd., Slough.

National ADHESIVES

EVERY TYPE OF ADHESIVE FOR EVERY INDUSTRIAL USE

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EXPERIENCE is knowledge and skill in action. It is the art of applying what has been learned in the past to the job at hand; the knack of knowing what to do and how to do it. Experience, looming large in the background of every successful organization, works not only for its possessors, but for those they serve. Phoenix Metal Cap Co., Chicago 8 and Brooklyn 18.

Modern packaging

Vol. 21 No. 5 January 1948

GENERAL

Outlook for '48 71
Our annual year-end survey discloses ample resources for another good year in packaging—unless the pinch of European-aid requirements touches off another round of substitution and shortage; steel is the key material.

This month's Cover Package 81

Macy's fancy pantry 82
A model of modern self-service merchandising that demands almost 100% pre-packaging.

Wife savers 85
Maxson's new individual-portion pack for pre-cooked frozen foods that can be heated in the package bids for a place in mass-market field.

Vendor package 86
A $1 pack of nylons, merchandised like cigarettes, demonstrates a solution of vending-machine packaging problems.

The new Vus weatherproof box 88
Underwriters and box makers develop a peacetime V-box to meet the rigors of today's export shipping. By ALFRED W. HOFFMAN.

Cheese dish 91
Molded of clear polystyrene and used as an extra-cost package for cottage cheese, it makes a quarter-million new customers for Golden State in two months.

Design Histories 92

All throwaways 94
Carling's sells only packaged brew and sells it only in no-return containers at no extra cost—thanks to a specially engineered continuous-bottling operation; a 32-bottle case, 8-bottle take-home carton and new modified one-trip bottle for tavern use boost sales.

Pluto's new look 102
A world-famed trademark, red devil with pitchfork, becomes a friendly character as bottler of mineral water introduces first new products in 50 years.

Packaging Pageant 104

Photo chemicals 108
FR Corp.'s bright new package colors break tradition in the camera shop.

Do pallets cut shipping costs? 110
Bristol-Myers traffic manager reports an 80% saving in man hours on an experimental palletized shipment water-borne from New Jersey to San Francisco. By DAVID M. DALY.

Transparent hemispheres 113
A brilliant new treatment of drawn acetate is intriguing setting for DeVilbiss purse atomizer.

Display Gallery 114

Nitrogen pack 116
How it provides preservation for a product high in butter-fat. By G. C. NORTH.

Candy trends 118
New confectionery packages reveal intense interest in display values to meet competition.

Pocketed plastics 122
Compartmented envelope with protective lining guards molded acrylic ornaments en route to the assembly line at Ford's.

TECHNICAL

Discoloration of packaged red meat 125
Lack of oxygen the cause; treatment of wrapper reduces problem and development of an oxygen-permeable transparent film may finally solve it. By C. G. LAVERS.

Proofing of paper 128
A report on materials and processes now being used to impart new and improved functions to paper constructions. By M. L. DOWNS.

Questions and Answers 134

DEPARTMENTS

Equipment and Materials 138

Plants and People 144

For Your Information 150

U. S. Patents Digest 154

THE BORDEN COMPANY

CHOOSES REDINGTON

for efficient, high speed packaging of

BORDEN'S NONE SUCH MINCE MEAT

Packaging mince meat is difficult. Because of its adhering qualities, it cannot be moved by itself through a machine. Working parts would soon be covered and fail to operate.

So the Borden Company of New York called on REDINGTON for new machines capable of doing this out-of-the-ordinary packaging job at high speeds consistent with Bordon's tremendous productive capacity.

REDINGTON provided three machines, two for wrapping the mince meat in self-sealing waxed paper, and one for placing the wrapped mince meat into cartons. This complete unit produces 150 packages per minute.

Pockets on the wrapping machine are lined with waxed paper, into which moulded prints of mince meat are placed. Machines fold wrapper around print, seal long seam and folded ends of wrapper. Automatic mechanism transfers wrapped prints from twin intake belts into pockets of cartoner. A folded, magazine-fed circular is placed over one end. Carton is fed from another magazine, expanded, and wrapped print with circular is inserted. End flaps are glued, and code date is stamped on carton.

Like all REDINGTON type 23 High Speed cartoning machines, those in use at The Borden Company have continuous loading mechanism, turned and ground shafting, self-aligning roller bearings, and skip-cartoning device.

For 51 years, REDINGTON machines have been successful in solving the packaging problems of many of America's foremost manufacturers. They always save vital time and labor costs. Let them package *your* product.

F. B. REDINGTON CO. (Est. 1897) 110-112 S. SANGAMON ST., CHICAGO 7, ILL.

1897 REDINGTON 1948

FIFTY-FIRST YEAR

AUTOMATIC CARTONING • WRAPPING • SPECIAL PACKAGING

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Member of Audit Bureau of Circulations

MORE COVER PACKAGES

A YEAR AGO we announced a new idea in magazine covers: the illustration of hypothetical solutions of some carefully posed problems by leading package designers, amplified by an analysis of the designer's characteristic style, thinking and procedure. We expected that this would comprise a series of 12 covers.

We underestimated both the diversity of available talent in the package-design field and the avidity of our readers' interest in this type of information. The series will be continued through 1948.

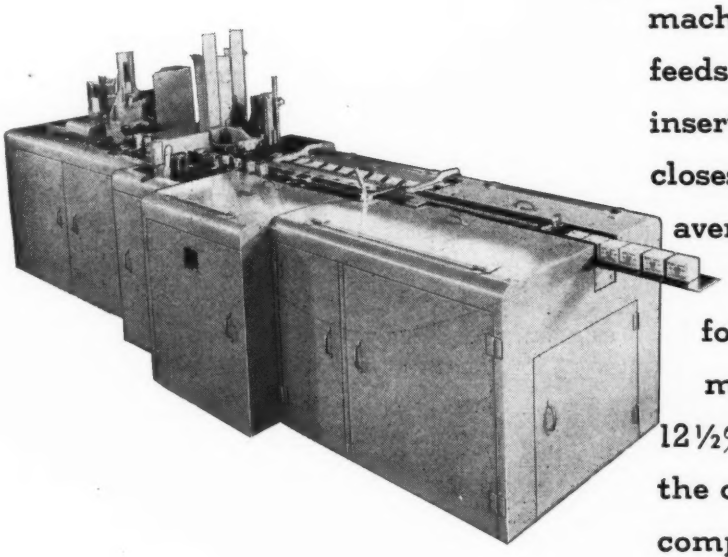
The part that the designer's touch can play in the success or failure of a package has been demonstrated beyond question. We feel that the contract for a designer's services should be entered into with at least as much intelligence and care as the purchase of a carload of boxboard. It should not be based on hearsay or hasty judgment. Even the month-to-month examples of designers' work that appear in these pages often fail to give a fair sample of their capabilities—because of limitations of the problem at hand, established traditions that cannot be discarded, or just plain prejudices of the client that must be catered to.

We look upon our hypothetical Cover Packages, therefore, not as mere eye appeal for the cover, but as a matter of information as important to the package user as anything that appears between these covers. Just as the worth of a new machine or a new form of package may be judged by the details and specifications revealed in a conventional article, the potentialities of a designer for solving *your* particular packaging problem may be judged by reference to this candid close-up.

It is gratifying to know, judging from the enthusiastic response of readers, that our cover series is being used as it was intended. With the selling power of a package taking on ever more importance in today's trend toward a critical buyer's market, we feel that this kind of reference information was never more necessary.

The Editors

CAN YOU CARTON 7200 BOTTLES FOR $1.52?



THIS Jones Constant Motion Cartoner receives the bottles from the preceding machine. It feeds and folds a leaflet—feeds and opens the carton—gradually inserts leaflet and load into the carton—closes and tucks both carton ends—at an average rate of *7200 packages per hour.*

This cartoner will work for you for 62¢ per hour—including power, maintenance and depreciation at 12½% annually. Add the hourly wage of the one operator—estimated at 90¢—and compare the $1.52 total with your present cost!

For complete information, write us today enclosing samples of your product.

R. A. JONES & COMPANY, INC.

P. O. Box 485 CINCINNATI, OHIO

THE MAJORITY OF AMERICA'S CARTONED PRODUCTS ARE JONES CARTONED

Do you stack?

Recently, a Mr. S. wanted to see us. "I have a swell invention which will make a lot of money for you," he said.

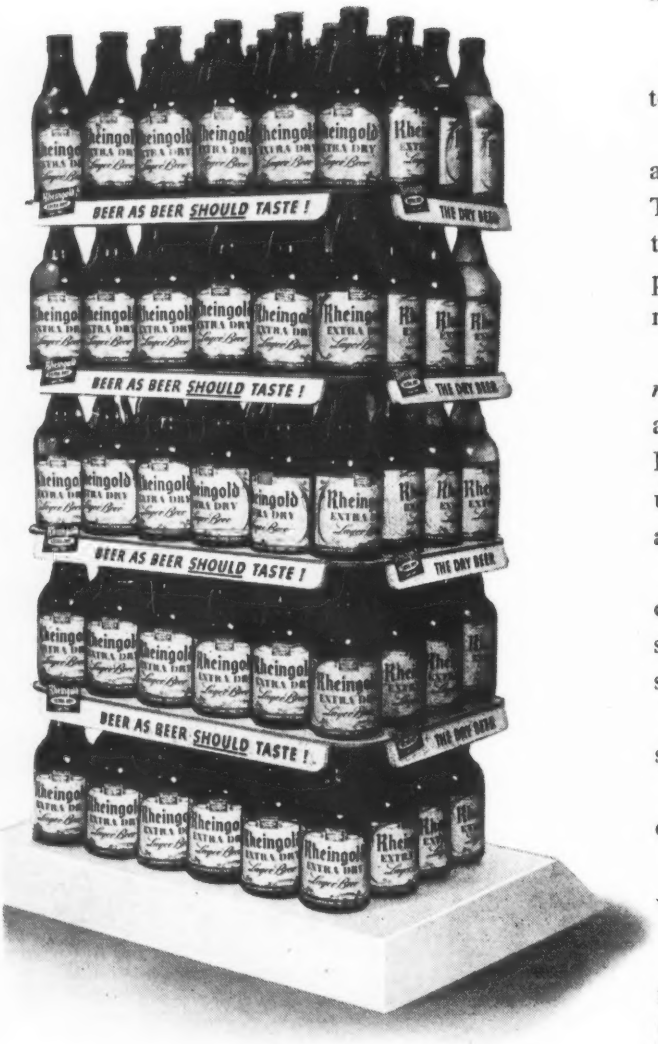
"That's fine," we said.

"I got a grocery in Flatbush." said Mr. S., "on a very busy street. Trucks, trucks, trucks—they go by all the time. The street shakes, The store shakes. From shaking, the stacks of bottled beer fall down. To prevent such, I invent this invention."

We thought the invention was pretty wonderful . . . filled a long-felt want of big companies and small storekeepers all over the country who would be grateful to Mr. S! And to us if we made it available, So we offered to manufacture it, and pay Mr. S. a royalty on sales.

"Hm'm. No cash down?" asked Mr. S. We gave him an advance check.

"How about a full-time job, idea man?" We told him the place was lou—full of idea men, full time.


BEER AS BEER SHOULD TASTE !
THE DRY BEER
BEER AS BEER SHOULD TASTE !
THE DRY BEER
BEER AS BEER SHOULD TASTE !
THE DRY BEER
BEER AS BEER SHOULD TASTE !

"Okay" said Mr. S. thoughtfully. "But someday I got to invent a way of getting out of that grocery."

The invention is so simple, and so practical that only a man with falling beer bottle problems could think of it! Three layers of board; the top layer punched to fit the base of the bottle; bottom layer punched to fit the top of the bottle; the middle layer not punched at all.

With the Flatbush Stacker (*we invented the name*) every stack of beer bottles becomes a virtual Gibraltar, comparatively speaking! Bottles, beer and proprietors remain unperturbed through normal truck, train, and traffic tremors, or even upstairs over a bowling alley!

The stacker is custom-made to fit bottles, jars and cans of all sizes—will help good products get better positions in supermarkets, and stay in position, will please proprietors, store managers, salespeople and customers.

Brand names and slogans, on the edges, make every stack an advertising display as well as a product display.

Terms very reasonable—and the Flatbush Stacker is exclusive with Einson-Freeman!

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Backyard Ocean

. . . a foot deep

Another interesting application of Geon polyvinyl materials

THIS "ocean" is constructed from an unsupported sheet of plastic material made from Geon polyvinyl resins. This plastic offers a combination of properties which could hardly be obtained from any other material. It's waterproof and mildew-proof—and it's smooth, flexible, tough, and long-lasting.

Such qualities make the Geon materials equally suitable for wire insulation or clothesline or upholstery. In fact, no one has yet been able to predict how many practical, money-saving, quality-improving or cost-cutting things Geon can do. This we know: Just as it adds to children's fun and safety in the back yard it can create new benefits to consumers and new markets for manufacturers.

How can you use Geon? It can be extruded, pressure or injection molded, used as a coating for paper or textiles, calendered or cast into sheets or film.

We make no finished products from GEON—or from any of our other raw materials. However, we will be glad to work with you on any special problems of application. We are particularly interested in developing new end uses for these materials. For more information please write Department S-1, B. F. Goodrich Chemical Company, Rose Bldg., Cleveland 15, Ohio.

Boltaflex Plastic for Kiddie Pond manufactured by Bolta Products Sales, Inc., Lawrence, Mass.

B. F. Goodrich Chemical Company

A DIVISION OF THE B F GOODRICH COMPANY

GEON polyvinyl materials • HYCAR American rubber • KRISTON thermosetting resins • GOOD-RITE chemicals

ACCENT ON SHOWMANSHIP!

Every Milprint package is first proven in the laboratory... tested for quality and strength... given stringent examination to insure maximum protection. Thereafter, the accent is on salesmanship. Special industry experts, creative artists, merchandising designers all pool their knowledge to create a package that sells itself... with brilliant new colors, fresh designs, powerful display appeal and that extra ingredient that means additional sales from the shelf—SHOWMANSHIP.

If you feel that your package isn't doing the job—in today's tough, competitive market—let one of Milprint's packaging engineers show you how Milprint can inject new life into your sales by putting showmanship in your package.

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Right Now! That's when we can make delivery on these smart, gem-like molded closures—for jars, bottles and other containers. Probably no need to tell you, too, that they're durable, easy to apply, rustless, and resistant to oils, chemicals and corrosives. You, as well as your dealer, know from past experience how good Mack plastic closures are, and how they enjoy wide consumer acceptance. The important thing right now is that you can get them RIGHT, and you can get them NOW! Samples and quotations on request; write to Mack Molding Company, Inc., 160 Main Street, Wayne, N. J.

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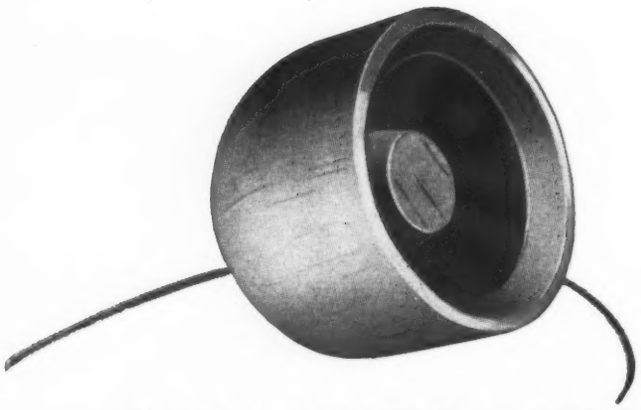


THIS DODGE CORK ADDS "Sell" TO A STRIKING PACKAGE

BEAM'S fine old Bourbon comes in this unusual bottle. To top it off with customer appeal, Dodge designed this distinctive tenpin top cork for the James B. Beam Distilling Company. Note how the natural finish maple top harmonizes with the package. Top is firmly united to a cork shank that assures perfect sealing and resealing.

Providing closures that look just right and seal airtight is a Dodge specialty. When you consult Dodge, you draw on four generations of experience in closure manufacture. Discuss your particular needs with us.

DODGE CORK COMPANY, INC., LANCASTER, PA.

DODGE CORK CLOSURES

designed to Guard the Integrity of the Contents

Primer of Packaging Perfection

P is for Prunes

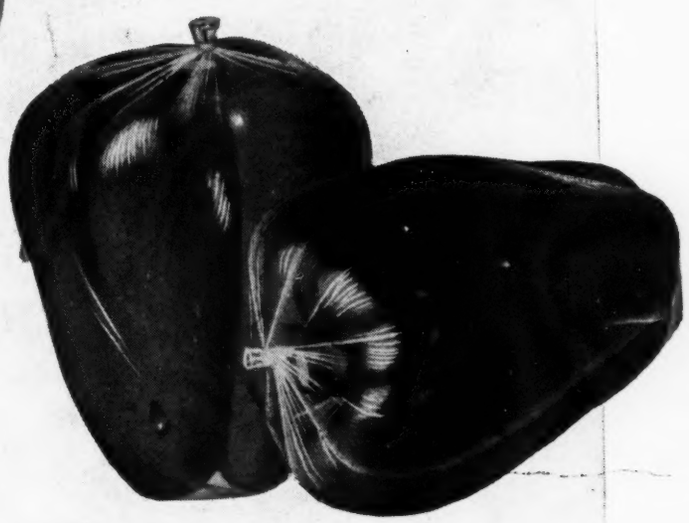
DRIED

DEE-LICIOUS is the word for prunes packaged in PLIOFILM. For this miracle wrapping keeps the fruit from drying up into leathery nubbins that require hours of soaking and stewing to make palatable. It seals in so much of the prunes' natural moisture, a few minutes' cooking transforms them into plummy juice-filled delights. That is because PLIOFILM is air-vapor-liquid-proof. It prevents dehydration and flavor loss; seals out insects and other contaminations, too. It's the perfect package for all moisture-sensitive foods — fresh, dried or frozen — a sales asset extraordinary.

and for Peppers

FRESH

KEEP FOR WEEKS! Yes, tests prove that peppers wrapped in PLIOFILM keep well-nigh perfect for two weeks or more after unprotected peppers have begun to shrivel and soften. Peppers in PLIOFILM are still fat, crisp and pungent when others are wrinkle-withered, shrunk and tasteless — because PLIOFILM provides three-way protection against air, moisture, liquids. It seals in the tasty succulence of peppers and prunes, just as it seals out flavor-stealing moisture from products like potato chips and popcorn. It keeps wanted moisture in — unwanted moisture out!



3-way protection against air, moisture, liquids

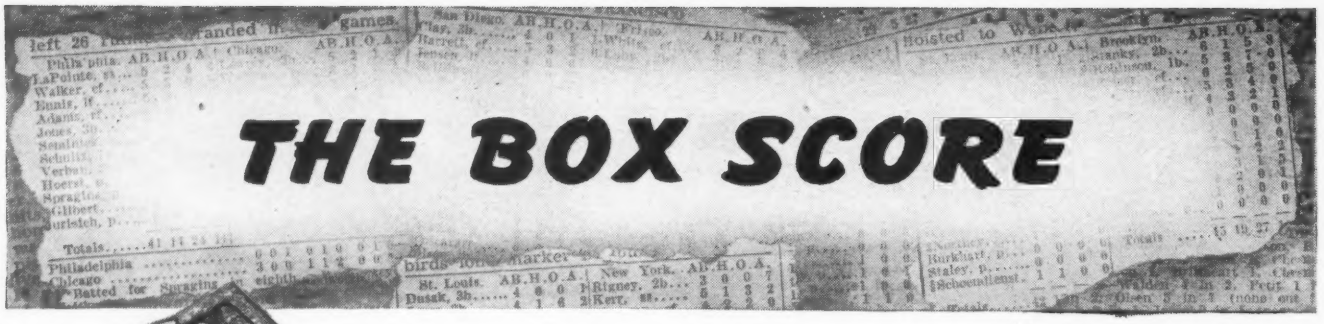
Everything is better in Pliofilm

THE ANSWER TO PACKAGING PROBLEMS FROM A TO Z. Whether you're packaging aspirin, zwieback or any moisture-sensitive product, you'll benefit by PLIOFILM'S three-fold protection against air, moisture, liquids. You'll step up sales, too, because PLIOFILM protection is a guarantee of superior quality every shopper recognizes. For information, write: Goodyear, Chemical Products Division, Pliofilm Dept., Akron 16, Ohio.

Pliofilm —T.M. The Goodyear Tire & Rubber Company

GOODYEAR

THE GREATEST NAME IN RUBBER



Makers of fine paper boxes have made many hits and no errors with Arabol Adhesives.

Whether you're interested in set-up or folding boxes or in paper converting in any form, see your Arabol representative when he calls. He knows adhesives and can help you find the types that serve best in your individual case. Arabol has been a pioneer for more than 60 years.

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in the making of
ADHESIVES THAT WORK

Adhesives?... **ARABOL!**

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WITH THESE OUTSTANDING CARTONS

Does your package *attract* buyers? You can give your product powerful sales appeal with an eye-catching United carton. Cartons by United *stand out* on shelves and counters . . . call attention to your brand . . . indicate high quality . . . *invite* impulse buying. Our engineers will gladly show you, without cost, how United cartons can earn bigger profits for you. Write United today.

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EVEN WHEN STRETCHED several hundred per cent, Plax Polyethylene sheet is tough, moisture-proof, odorless, tasteless, and pleasing to touch.

An ideal material for food packaging, it protects goodness without hiding it. Chemical inertness makes it an effective wrapper for everything from food to corrosive chemicals. These qualities, plus color, have led to its wide use in the home—as aprons, clothes bags, bowl covers, etc.

Plax also supplies Polyflex* Sheet and Film, and cellulose acetate, cellulose acetate butyrate and ethyl cellulose sheet and film. To be sure you have the complete story about Plax products, please write for details.

*T.M. reg. U. S. Pat. Off.

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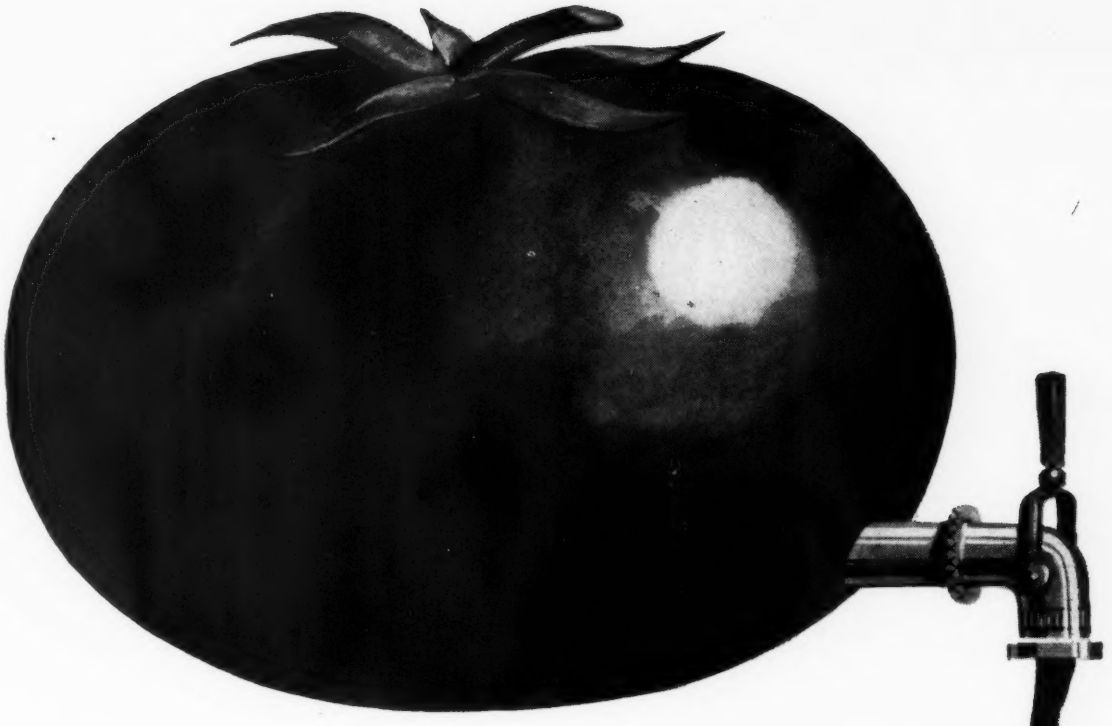


Maybe there's a point here about profits for you

Not many people "drank" tomatoes in 1928, for tomato juice was practically unknown.

But today "drinking tomatoes" is a big business, totaling an annual pack of more than 30 million cases.

How come?

Because of two improvements in canning tomato juice, made by American Can Company.

And just possibly Canco can find—through its many resources and 47 years of package improvement—hidden and extra profits in *your* business, too.

AMERICAN CAN COMPANY

CANCO

New York · Chicago · San Francisco

It's *Glass* for visibility...

"VISIBILITY" sells your products. Foods packed in glass stimulate the appetite and the desire to buy—create impulse sales. All the color, quality and goodness of your products beckon to buyers... 87% buy from "seeing." Unused portions are left in the original container—if it's glass—and the visual inventory tells when to reorder. Your label and closure remain to remind the user to reorder *your* brand. "Visibility" is only one of the many reasons why glass containers will help sell your products. Remember, too, in your packing operation you can see your products at all times!

Anchor CONTAINERS and CAPS

PRODUCTS OF
ANCHOR HOCKING GLASS
CORPORATION
LANCASTER, OHIO

AND IT'S *Anchorglass* FOR MAXIMUM VISIBILITY

"Crime Photographer", Thursday evenings, entire CBS network, sells all America on glass-packaged products.

YES, LUCKY LADY, INDEED! Among her gifts she finds a Fieldcrest set of quality towels in the striped foil package. The chances are slightly better than 4 to 1* that this outstanding product was chosen because of the package. LUCKY, TOO, is the manufacturer who chooses Old Dominion for his box production. Whatever your needs may be in set-up, corrugated, folding or canister type packages, you'll find that Old Dominion makes a box with extra sales appeal, display value, protection and product identification that helps to sell your product. Consult Old Dominion today.

**Recent consumer preference surveys show that 84% of the buying public today prefer packaged products and that most of these customers recognize product and brand identification by the package. Write today for Old Dominion's booklet on set-up boxes, #76.*

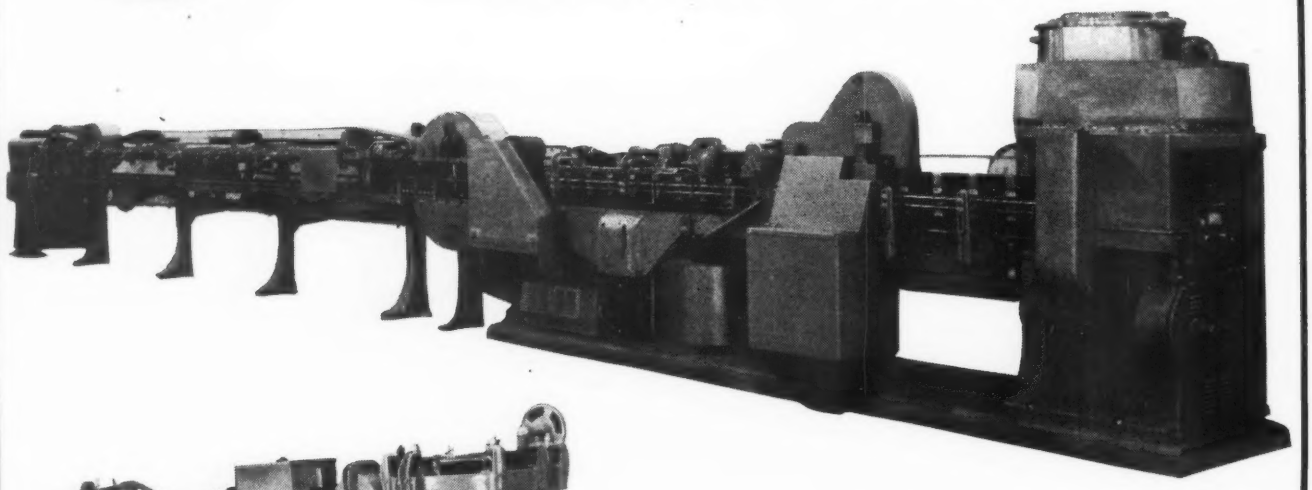
OLD DOMINION *Box Company Inc.*

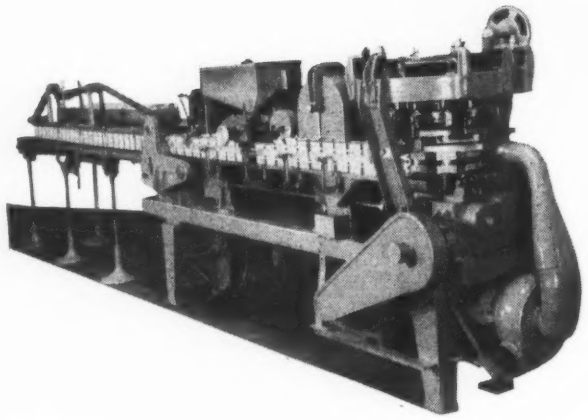
PLANTS LOCATED THROUGHOUT THE SOUTH

CHARLOTTE, N. CAROLINA

THE SOUTHERN BOX MAKER WITH A NATIONAL REPUTATION

NEVERSTOP CARTON FILLER & SEALER





Above:
Model "A" High Speed Carton Filling and Sealing Machine. Production 160 per minute.

Left:
Model "E" Carton Filling and Sealing Machine. Production 60 per minute

The "Neverstop" automatically feeds and seals cartons while in continuous motion, so that high speed production is obtained with slowly moving mechanisms. Volume filling is also accomplished without stopping the moving carton.

The "Neverstop" is extremely adaptable. Weighing or auger feed filling machines can be combined with the "Neverstop" when materials require their use. For free flowing materials having nearly constant volume per pound, the filling mechanism is incorporated in the machine, securing the advantages of less cost and floor space. For smaller cartons a made-up bag (liner) may be automatically fed and inserted into the carton before filling and, afterward, automatically folded and crimped or heat sealed.

The "Neverstop" Machines are furnished for either hand or automatic carton feed. An extremely tight seal is assured, top and bottom, since both are made in the same way. All carton flaps are glued, the first wide flap folded being crowded over into the fold of the second wide flap as it is folded down.

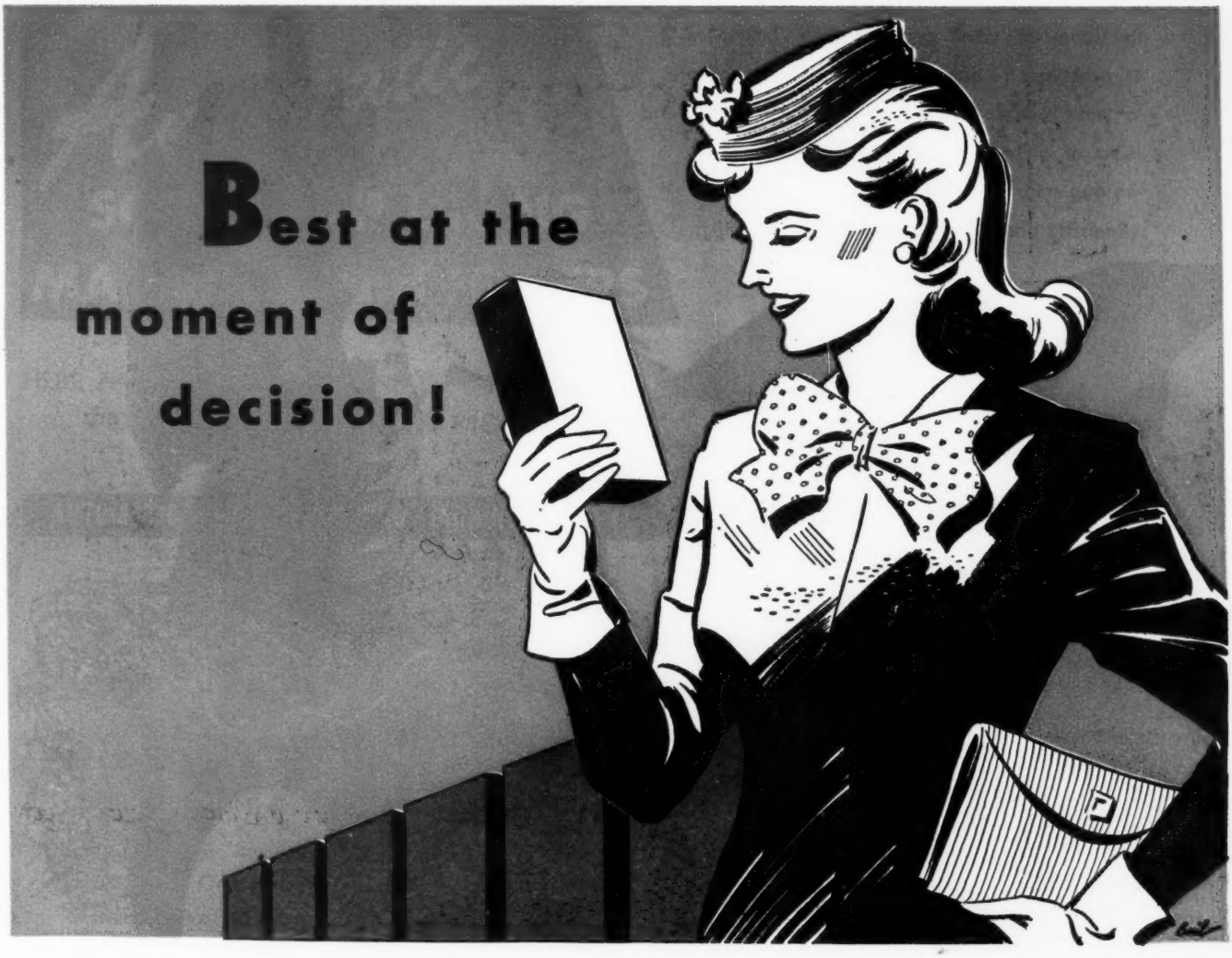
Detailed information will be furnished upon request. A sample package will help in specifying equipment.

STOKES & SMITH Co

PACKAGING MACHINERY — PAPER BOX MACHINERY

FRANKFORD, PHILADELPHIA 24, PA.

FILLING • PACKAGING • WRAPPING MACHINES



WHY A.C.M. CARTONS EXCEL

Whiter board—more uniform—
velvet-smooth surface—
more rigid—tougher—
better folding qualities—
greater luster and brilliance—
perfect reproduction in either
letterpress or lithography.

The Secret is in the SURFACE!

At that vital moment when *shoppers* become *buyers,* your package may be the deciding factor in their choice. That's why carton selection rates primary consideration in your sales plans. On dealers' counters or shelves it must both *tell* and *sell* to succeed in today's competition.

When your product is packaged in A.C.M. *Clay Coated* Cartons you can be sure that you have put your best "sales front" on display. Their pure white, velvet-smooth surface, produced by an exclusive, continuous process, enhances any design—adds brilliance and luster to either letterpress or offset reproduction.

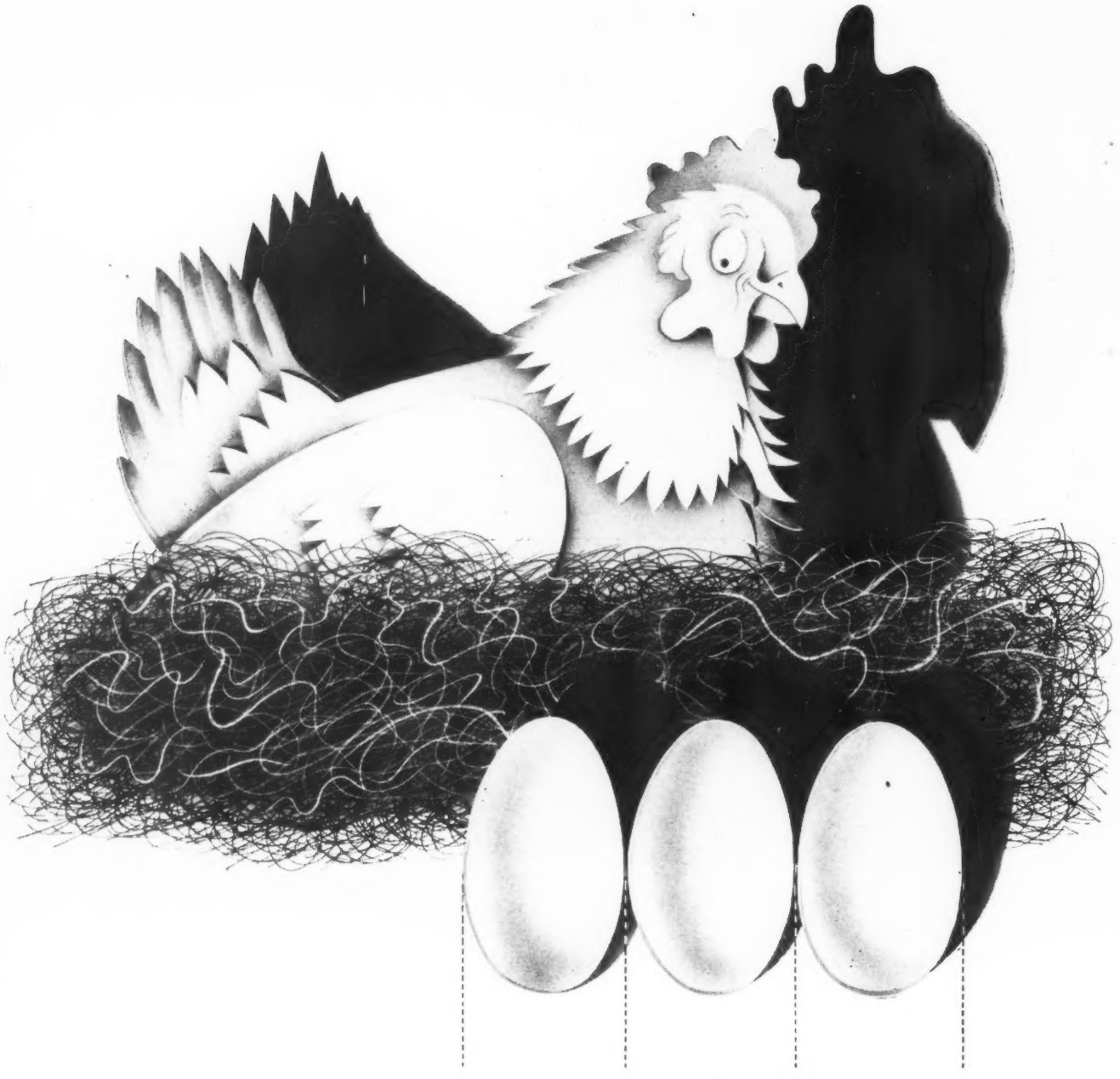
Accurate control of every step from pulp to finished product assures more perfect cartons, planned and produced to attract shoppers and turn them into buyers!

AMERICAN COATING MILLS
Division of Owens-Illinois Glass Company

America's Largest Producers of Clay Coated Folding Boxboard and High Quality Printed Cartons

SALES OFFICES: *Elkhart, Ind. • Chicago • New York • St. Paul • Memphis • Grand Rapids • Evansville • Detroit*
PLANTS: *Elkhart, Ind. • Chicago • Memphis • Grand Rapids*

A.C.M. Clay Coated Cartons
and carton board



U N I F O R M I T Y

Printing, cutting, folding, gluing

the millionth carton—like the first.

CHICAGO CARTON COMPANY

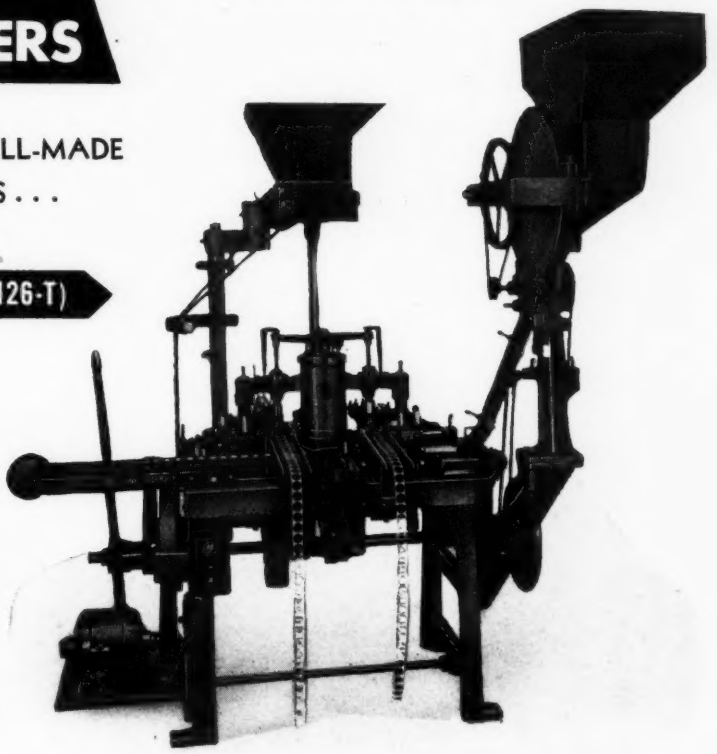
CHICAGO CARTON COMPANY

4200 SOUTH CRAWFORD AVENUE • CHICAGO 32, ILLINOIS

Automatic SCREW CAP LINING MACHINES and FEEDERS

For cutting and inserting liners in metal or plastic screw caps, any size from 89 mm. down to the smallest made—lining odd shaped caps or spouts—arranging caps for feeding to other units—you can get a Johnson machine guaranteed to do the work rapidly and efficiently.

HERE ARE THE SPECIFICATIONS OF TWO WELL-MADE WIDELY USED **JOHNSON** PRODUCTS . . .



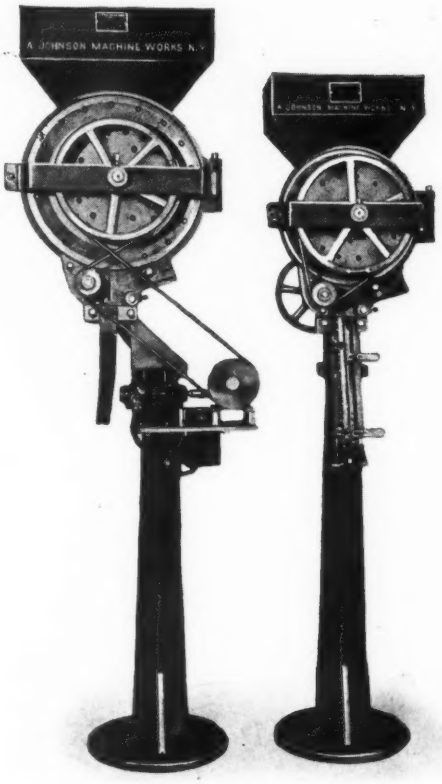
AUTOMATIC SCREW CAP LINING MACHINE (#126-T)

Function: Die cuts single or double liners of any material and inserts them into metal and plastic screw caps. Has special hopper to feed and insert cork discs and other pre-cut liners.

Cap sizes: 15 to 38 mm. inclusive.

Speed: 250 to 300 caps lined per minute.

Other features: Equipped with motor drive and clutch. Occupies only 18 square feet of floor space. Easy to operate. Needs little maintenance.



AUTOMATIC FEEDER (HOPPER)

Function: Will sort and feed your metal and molded screw caps, shells and similar articles into one row, delivering all closures with open side up, down or on edge, whichever position is desired. Widely used for feeding to cap presses, threaders and cappers as well as for inspection purposes.

Cap size: 18 to 42 mm. (left) 18 to 34 mm. (right). Other models feed from smallest cap made up to 53 mm.

Speed: Up to 300 caps per minute depending on size and shape of cap.

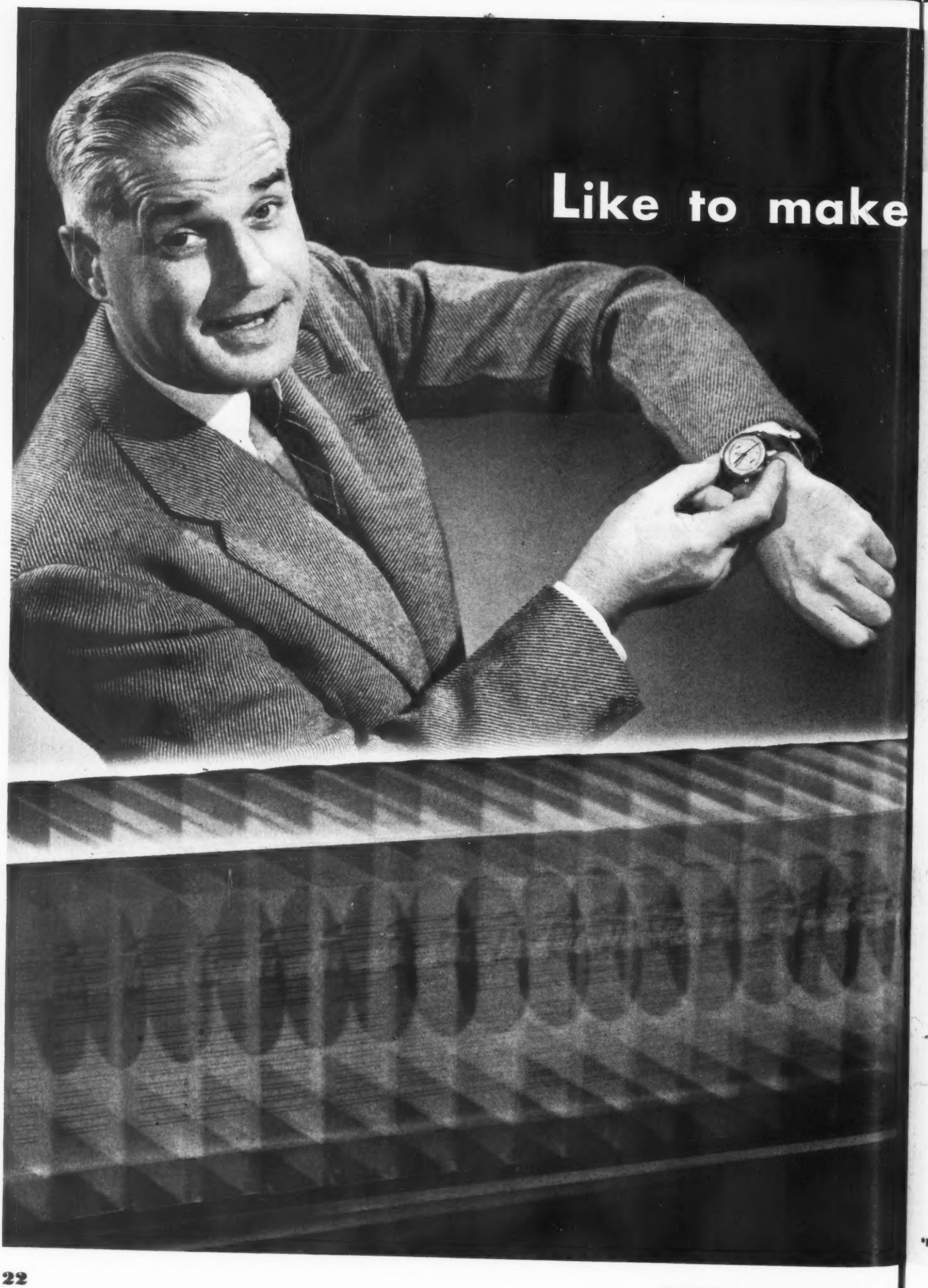
Other features: Available with motor drive (left) or pulley drive (right) and with curved or straight delivery chutes.

Johnson machines have set the standard of quality in their field since 1901. You will find them in the plants of the largest closure manufacturers and users.

Write for our free, 80 page catalog.

A. JOHNSON MACHINE WORKS, INC.

251-259 Lee Avenue, JMW U.S.A. Brooklyn 6, N. Y.


Like to make

your filling machines

work 65 seconds a minute?

THERE'S A GOOD CHANCE YOU CAN — WITH GARDNER-RICHARDSON CARTONS
THEY'RE PRECISION-ENGINEERED FOR EXTRA SPEED

Suppose you could get . . . in 60 seconds . . . the production you're now getting through your filling machines in 63, 64, or 65 seconds. Would that be worthwhile? Figure out what it would mean per hour, per day, per week.

Making high speed filling machines do more work per minute—through Precision-Engineering—is something we've been specializing in for a long time, here at Gardner-Richardson.

Some of the largest users of folding cartons in the country are well aware of this. They've seen what happened when Gardner-Richardson teamed up with their operating men to step up filling machine production.

Sometimes, what looked like a trivial change has made a tremendous difference. In almost every case, Gardner-Richardson's Precision-Engineered uniformity has been an important factor in better performance.

We don't promise miracles. But give us an opportunity to study your specifications, your cartons and your operations. We believe we may be able to come up with recommendations that will have your filling machines "working more than the usual 60 seconds per minute." Ask for a Gardner-Richardson representative to call. It places you under no obligation.

And remember **. . . More eyes reach for your product in cartons of COATED LITHWITE!***

Coated Lithwite is the quality clay-coated board . . . PLUS! Made the modern way, with an exactingly level filmed-on coating. Whiter. Brighter. Holds up colors brilliantly, reproduces pictures with true-to-life realism. Folds, bends better, too. More receptive to adhesives. Rub-resisting. Fade-resisting. For a practical way to upgrade your cartons, investigate Coated Lithwite.

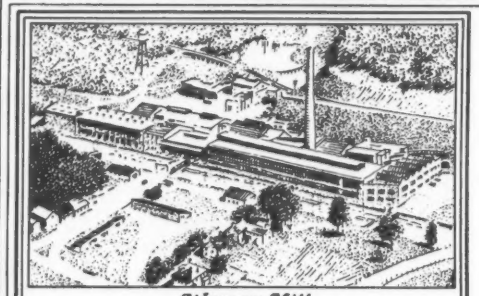
THE GARDNER-RICHARDSON CO.

Manufacturers of Folding Cartons and Boxboard, Middletown, Ohio

Sales Representatives in Boston, Chicago, Detroit, New York, Philadelphia, Pittsburgh, St. Louis

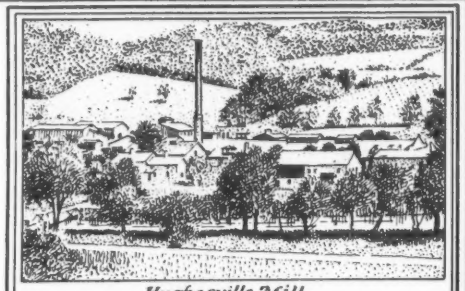
*Reg. U. S. Pat. Off.

FOR PACKAGING, CONVERTING, INDUSTRIAL, and PRINTING PAPERS~



Warren Mill

CONSULT RIEGEL



Hughesville Mill.

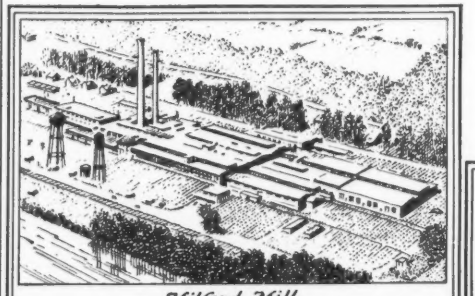
Consult Riegel when an ordinary paper won't do the job. Our Four Modern Mills produce over 600 Different Grades.

FOR PRINTING: Tufwite • Tympan • 20th Century (Plate & Embossed) • Jersey (Plate, Embossed, Antique) Jute Tag • Glen Tag • Crystallon Cover • and many other specialty grades

FOR CONVERTING: Envelope Stocks • File Folder • Guide • Index • Patch • Rope Papers • Jute Papers Duplex • Tab • Shipping Tag • Wool Felt Embossing • Container Stocks • Time Card

FOR PACKAGING: Glassine (Colored, Transparent, Opaque, Embossed, Printed, Lacquered, Waxed, Laminated) Anti-corrosive • Cake Wraps • Ballbearing Wrap • Bread Wraps • Coffee Bag • Diafane • Greaseproof • Riegelite Riegeline • Oilproof • Locker Paper, etc.

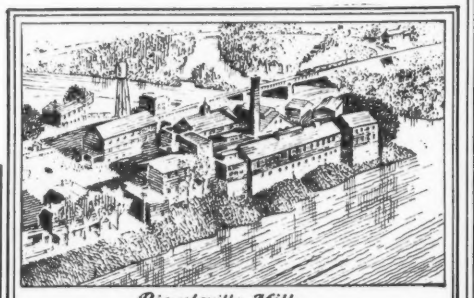
FOR INDUSTRIAL USE: Anti-tarnish • Anti-corrosive • Armature • Beaming • Braille • Calendar Roll • Coil Winding • Gasket • Imitation Pressboard • Oiled Stencil • Pattern • Pleating • Saturating • Sign Stock Travelling Offset • Plastic Base Papers



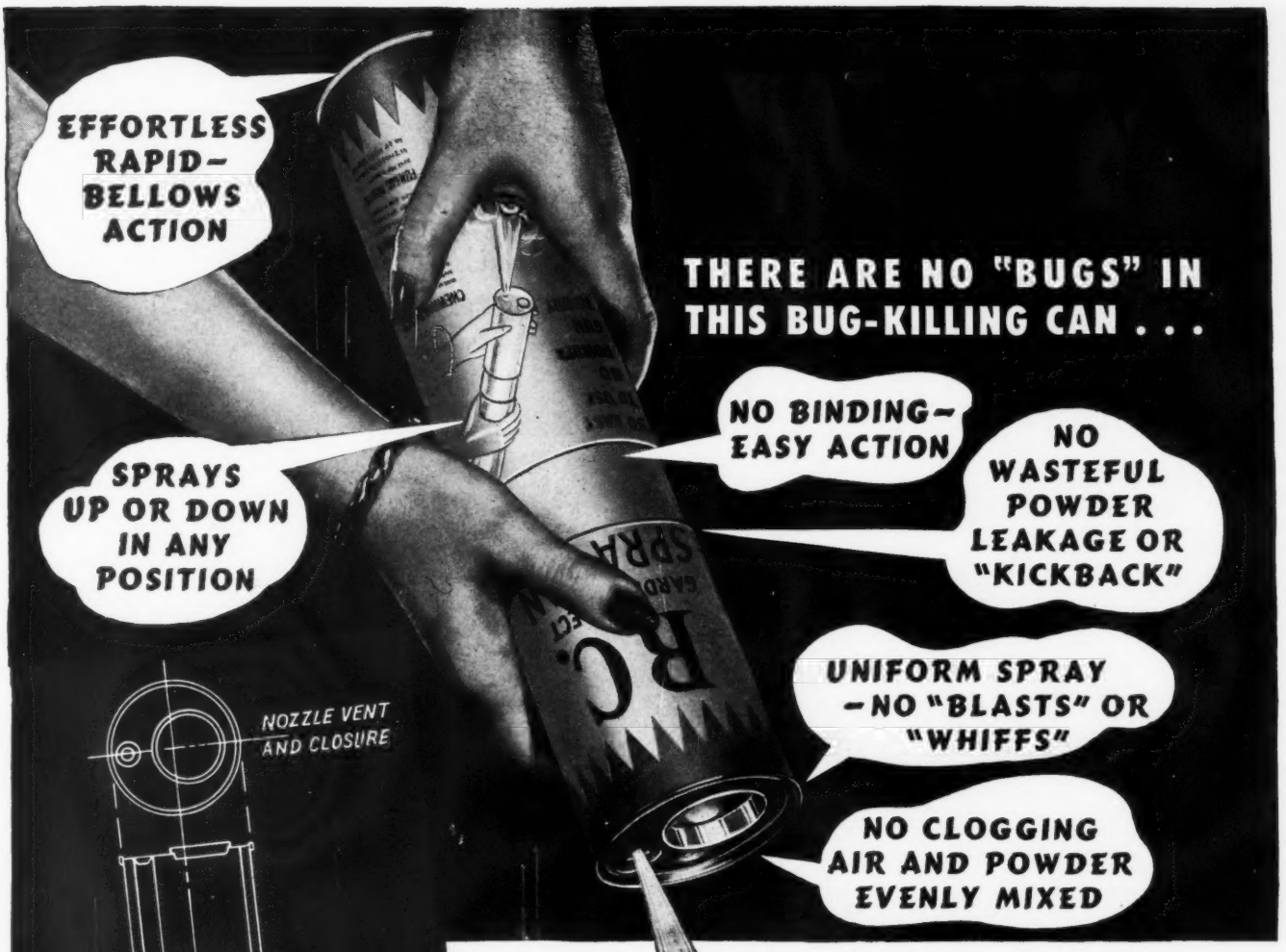
Milford Mill.

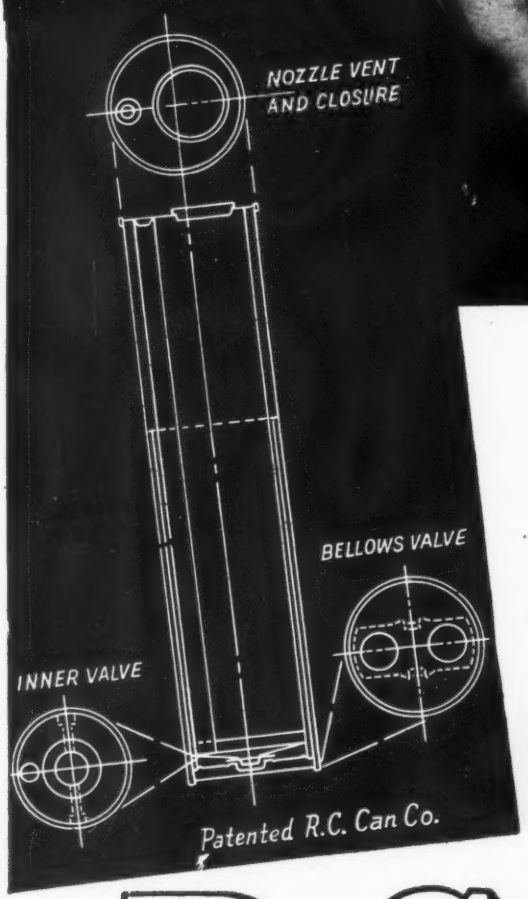
RIEGEL PAPER CORPORATION
342 MADISON AVENUE
NEW YORK 17, N. Y.

The RIEGEL MILLS
Founded 1862



Riegelsville Mill.


EFFORTLESS RAPID– BELLOWS ACTION
THERE ARE NO "BUGS" IN THIS BUG-KILLING CAN . . .
NO BINDING– EASY ACTION
NO WASTEFUL POWDER LEAKAGE OR "KICKBACK"
SPRAYS UP OR DOWN IN ANY POSITION
UNIFORM SPRAY –NO "BLASTS" OR "WHIFFS"
NO CLOGGING AIR AND POWDER EVENLY MIXED



PACKAGE ENGINEERING

by R. C.—runs the bugs out of packages and out of gardens, too!

The high standard of packaging features in the R. C. Spra-Can embodies special materials and construction for foolproof operation • Special moisture-resistant stock for free pumping action • Special spring-activated inner valve to retain powder and measure the air • "Breather" tube mixes air and powder and controls pressure • Countersunk discharge hole prevents spilling, maintains spray uniformity • Special feed construction—sprays up or down—sidewise • Tension bellows diaphragm withstands hard usage.

Supplied with closure top for refill—or with non-refillable solid top.

Put your packaging in the hands of R. C. Packaging Engineers!

R·C· CAN COMPANY

Manufacturers: fibre cans, tubes, spools and cores

R. C. CAN CO. The Stamp of Quality ST. LOUIS, MO.

BRANCH FACTORIES: ARLINGTON, TEX.; RITTMAN, O.; KANSAS CITY, MO.

SALES OFFICES:

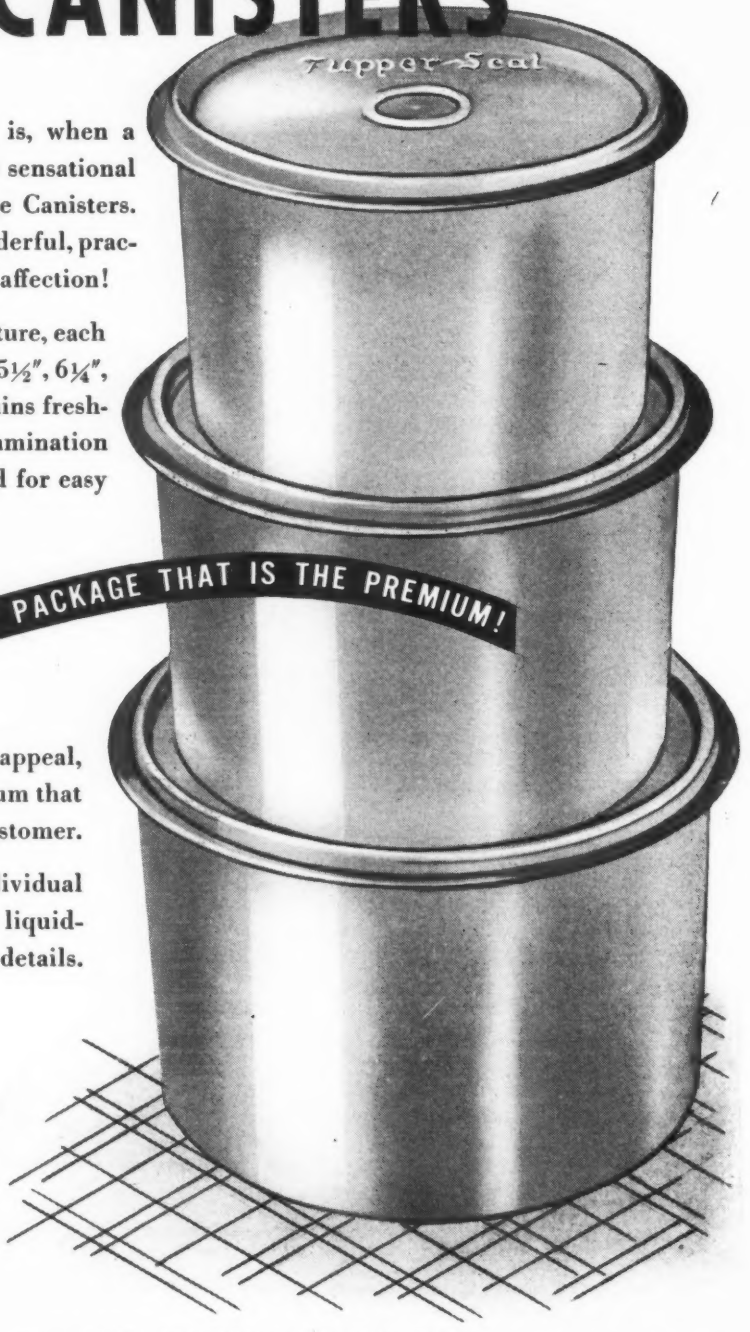
C. E. DOBSON, 819 Carondelet Bldg., New Orleans 12, La.
S. W. SCOTT, 608 McCall Bldg., Memphis 3, Tenn.
CAN SUPPLY CO., 1709 W. 8th St., Los Angeles, 14, Calif.
C. J. TAUGHER, 1628 W. Wisconsin, Milwaukee 3, Wis.
R. J. WATERS, 516 Fifth Ave., New York, N. Y.
EDWIN F. DELINE CO., 224 W. Alameda, Denver 9, Colo.
W. L. BENNETT, 126 S. Third St., Minneapolis 1, Minn.
L. C. MORRIS CO., 1125 Spring St., N.W., Atlanta, Ga.
H. K. GRINSTEAD, 633 S. Fifth St., Louisville, Ky.
ALLIED PAPER SPECIALTY SALES
P. O. Box 1082, Pittsburgh 30, Penna.

Better by Far Than Can or Jar!

TUPPER POLY-T CANISTERS

Love at first sight it is, when a homemaker sees these sensational Tupper Poly-T storage Canisters. And your product, premium-packaged in these wonderful, practical containers, earns a substantial chunk of that affection!

Made of famous Tupper Poly-T, Material of the Future, each canister is soft, glowing, opalescent crystal color—5½", 6¼", and 7" sizes. Air- and liquid-tight Tupper Seal retains freshness and flavor in stored foods — kéeps out contamination and odor. Flexible, to fit tight spaces — flat-topped for easy stacking — ideal for pantry or refrigerator use!



TUPPER GIVES YOUR PRODUCT THE PACKAGE THAT IS THE PREMIUM!

In Tupper Canisters you get a package with eye-appeal, combined with rugged durability. You get a premium that catches the eye and keeps your name before the customer.

Tupper creates all kinds of containers to meet individual needs, with or without the self-fastening, air- and liquid-tight Tupper Seal. Write us today for complete details.

exclusive TUPPER POLY-T, Material of the Future, can't break, chip, crack or peel! It's featherweight, flexible — tasteless, odorless, non-toxic — sanitary, easily cleaned!

TUPPER

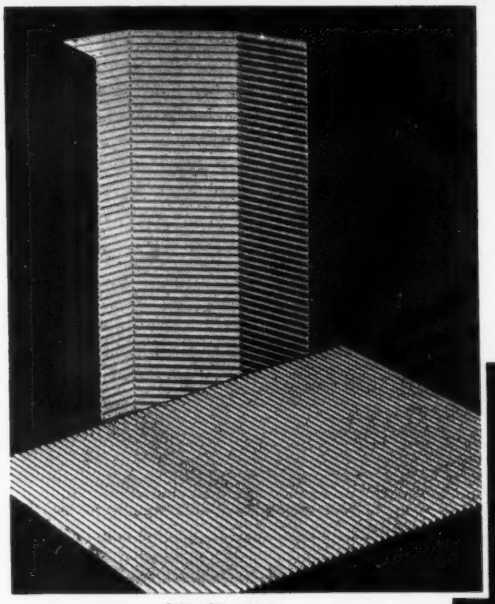
TUPPER CORPORATION, FARNUMSVILLE, MASSACHUSETTS • NEW YORK SHOWROOM, 225 FIFTH AVENUE

© 1947 TUPPER CORPORATION

Shield-pak

10
ATTRACTIVE COLORS

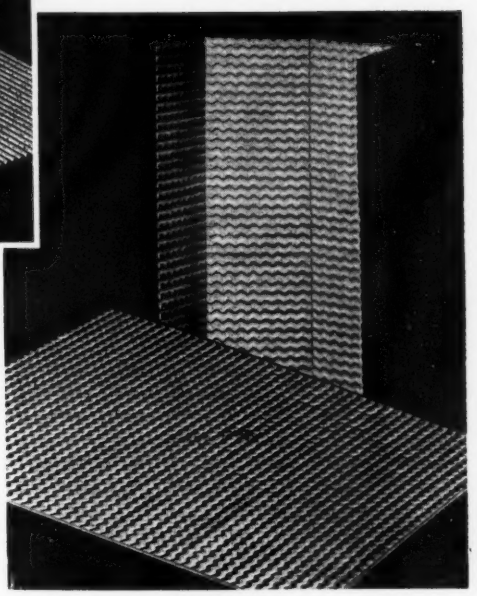
- NATIONAL RED
- NATIONAL BLUE
- AZURE BLUE
- FOREST GREEN
- APPLE GREEN
- NILE GREEN
- CANARY YELLOW
- PEACH
- ORCHID
- BLACK OR WHITE



STRATE LINE

AJAX PRODUCTS

Choice
OF TWO PATTERNS



WEAVE LINE

Beautify Your Package with Cushioned Protection

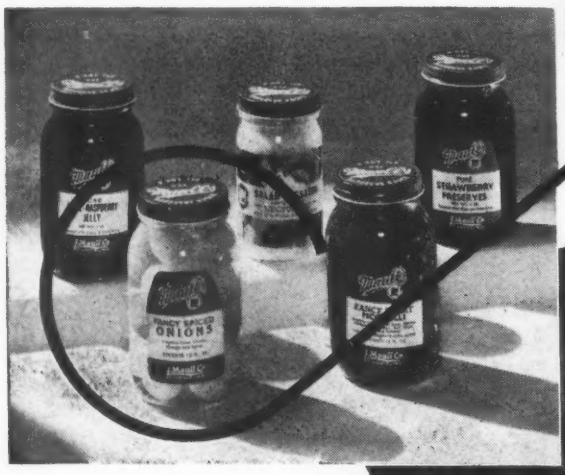
SHIELD-PAK as liners and pads in your set-up and folding cartons gives your product eye-appealing, SALES appealing color attractiveness PLUS corrugated-cushion protection. SHIELD-PAK is a single-faced corrugated paper produced in two distinctive designs and in a sufficiently wide variety of standard colors to comply with the established color schemes of most manufacturers. If, however, you desire a special color, we can meet your requirements. Send for complete sample kit today—there's no obligation, of course.

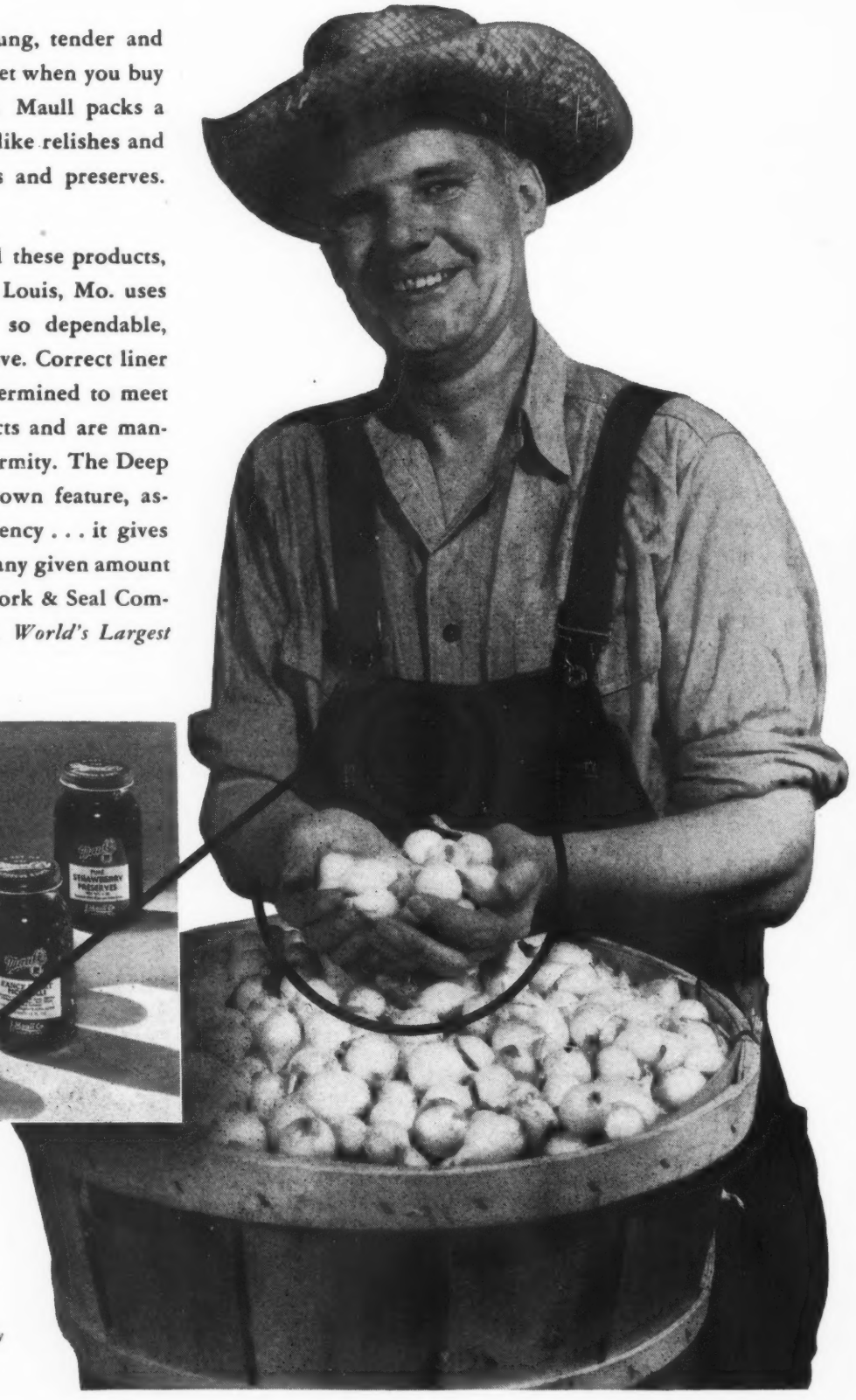
WRITE FOR INFORMATION THAT MAY SOLVE YOUR PACKAGING PROBLEM

"These are the kind Maull selects"

Yes sir, onions like these, young, tender and full flavored are the kind you get when you buy Maull's Fancy Spiced Onions. Maull packs a lot of other fine products too, like relishes and salad dressing . . . and jellies and preserves. They're all mighty tasty.

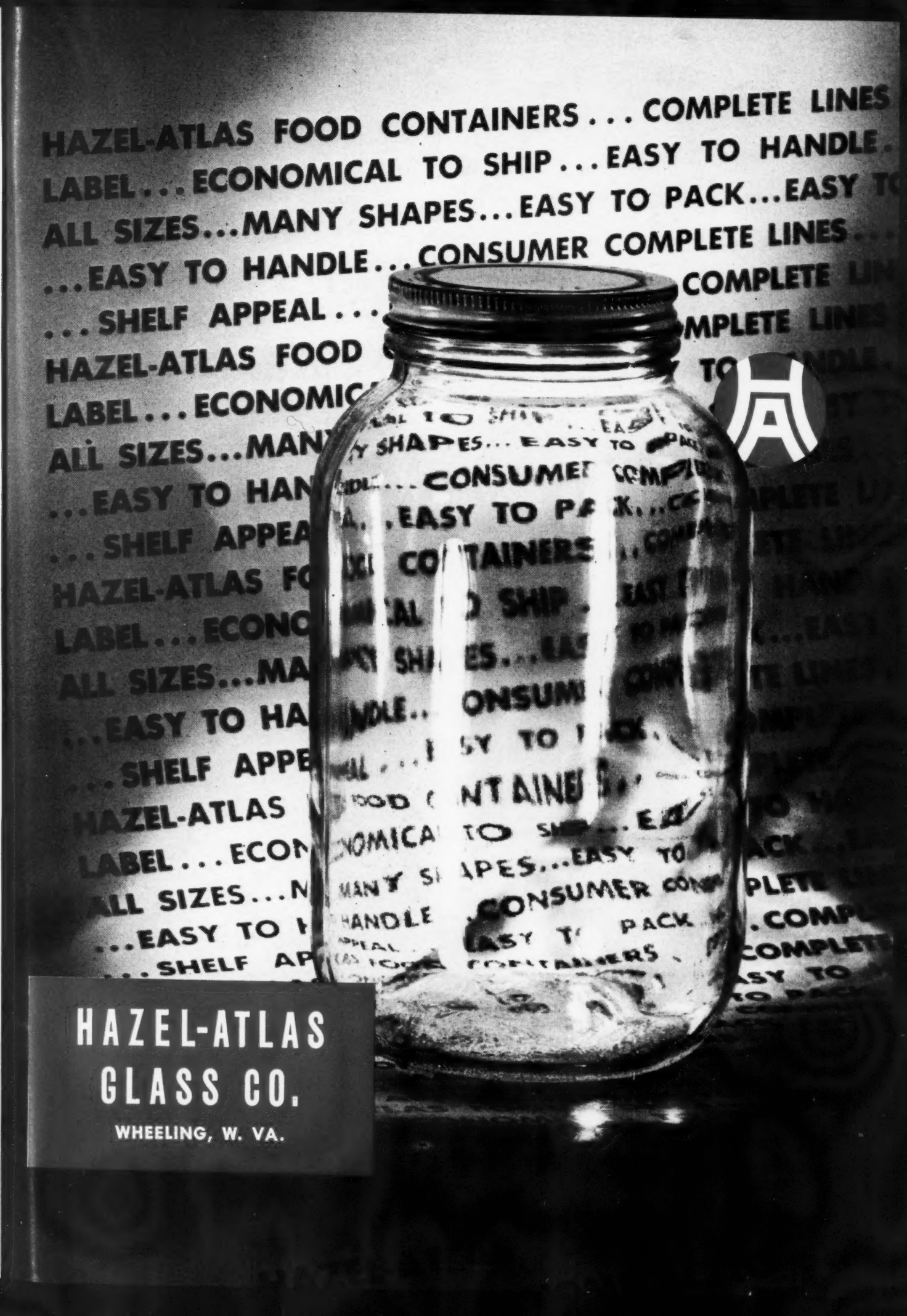
To protect the goodness of all these products, the L. Maull Company of St. Louis, Mo. uses Crown Screw Caps. They're so dependable, and so easy to apply and remove. Correct liner materials are scientifically determined to meet the needs of individual products and are manufactured to exceptional uniformity. The Deep Hook Thread, a patented Crown feature, assures maximum sealing efficiency . . . it gives greater sealing pressure with any given amount of application force. Crown Cork & Seal Company, Baltimore 3, Maryland. *World's Largest Makers of Metal Closures.*





Be sure to see the Crown Display at Booth 60, Convention Hall, Atlantic City. You are also cordially invited to visit our reception rooms, 1408-09 Hotel Claridge.

CROWN CLOSURES


HAZEL-ATLAS FOOD CONTAINERS . . . COMPLETE LINES
LABEL . . . ECONOMICAL TO SHIP . . . EASY TO HANDLE
ALL SIZES . . . MANY SHAPES . . . EASY TO PACK . . . EASY TO
. . . EASY TO HANDLE . . . CONSUMER COMPLETE LINES
. . . SHELF APPEAL . . .
HAZEL-ATLAS FOOD
LABEL . . . ECONOMIC
ALL SIZES . . . MAN
. . . EASY TO HAN
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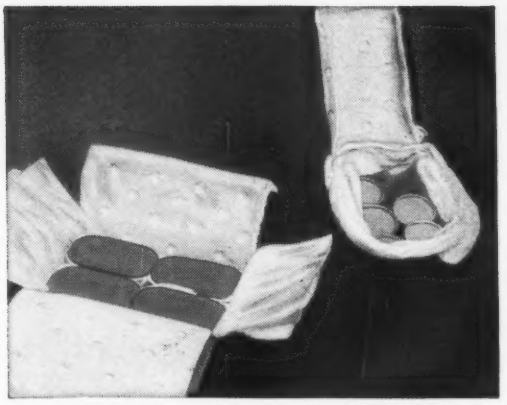
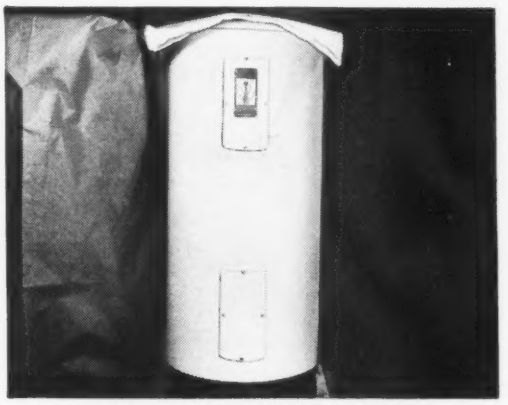
HAZEL-ATLAS
GLASS CO.
WHEELING, W. VA.



INSULATION PACKAGING—Hot Meals Aloft
Photo Courtesy United Air Lines



SURFACE PROTECTION—Water Heater
Photo Courtesy Hotpoint Inc.

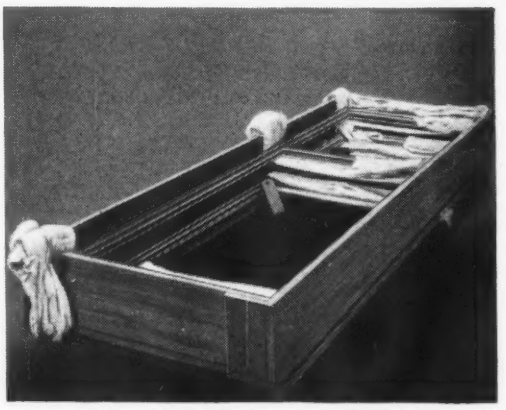
Greater protection—improved packaging for every product you ship

Downy-soft KIMPAK* creped wadding assures any product you package a safe journey. Whether the item is as unwieldy as a metal window frame or fragile as a porcelain urn, dependable KIMPAK shields it from damage.

For KIMPAK is a compact, feather-light cushion. It's strong and flexible. Neat, clean and easy to handle. And KIMPAK is economical—adds little weight or bulk to packaging . . . cuts profit-killing shipment losses.

Soft, snow-white KIMPAK is made either liquid absorbent or liquid repellent—it's shock absorbent. This grit-free material is available in a variety of types, thicknesses and backings to suit your particular interior cushioning needs. In fact, there is a specification of KIMPAK to meet every requirement of the Four Basic Methods of Interior Packaging—Surface Protection, Blocking and Bracing, Flotation Packaging and Absorbent Packaging.

Free for you. The wonderful KIMPAK booklet on better ways to package your product. Merely ask your local KIMPAK distributor or if you desire write: Kimberly-Clark Corporation, Creped Wadding Division, Neenah, Wisconsin.



BLOCKING AND BRACING—Metal Window Frames
Photo Courtesy Flour City Ornamental Iron Co.

FLOTATION PACKAGING—Porcelain Urns
Photo Courtesy Chas. A. Stevens & Co.

Kimpak
REG. U.S. PAT. OFF. & FOREIGN COUNTRIES

A PRODUCT OF Kimberly Clark RESEARCH

CREPED WADDING

*T. M. Reg. U. S. and Can. Pat. Off.

Just feel this!

...it's CROWN SUEDE

ANOTHER CROWN MARK PRODUCT

INNUMERABLE PACKAGING POSSIBILITIES

AT *LOW COST*

- Write for color chart showing the full line of styled-to-fashion shades that are available from whites through pastels to deep colors.

CROWN-MARK PAPER CORPORATION

155 East 44th Street, New York 17, N. Y.

124 W. 4th Street
Los Angeles, Calif.

1545 S. State Street
Chicago, Ill.

1387 Main Street
Springfield, Mass.

THE NEW ROTO BAG MACHINE*

built for dependable, high-speed operation

seals every seam with heat and glue

Here is the bag-making machine which measures up to the exacting requirements of both packers and paper converters. Here's why . . .

In the first place, it makes *stronger, better bags* from such heat-seal coated materials as cellophane, diafane and aluminum foil, *and,* unlike ordinary equipment, the ROTO applies an additional glue reinforcement to every heat-sealed seam for *extra* bag strength.

Secondly, the ROTO is built for heavy-duty, trouble-free performance. It has the simplicity of operation desired by packers, at speeds of interest to converters. All parts are precision-tooled from the finest materials. Every ROTO BAG MACHINE is sold with an unconditional guarantee.

Write for complete details.

* patents pending.

ROTO BAG MACHINE CORP.
310 EAST 22nd STREET NEW YORK CITY 10, N. Y.

VISIBILITY gives SPICE to your PACKAGING

...and Showbox MEANS maximum visibility

Whether it's cloves or candy, pepper or perfume, a Showbox presents your product at its dramatic best. Remember ... for added eye-appeal and faster "impulse" sales, put it in a Showbox.

See Showbox displays at our New York and Chicago showrooms.

Send us your product. Our Design Group will create a rigid, transparent plastic Showbox for your consideration.

SHOWBOX

Division of CENTRAL STATES PAPER AND BAG CO.

5221 NATURAL BRIDGE · ST. LOUIS 15, MO.

CHICAGO
520 N. Michigan Ave.

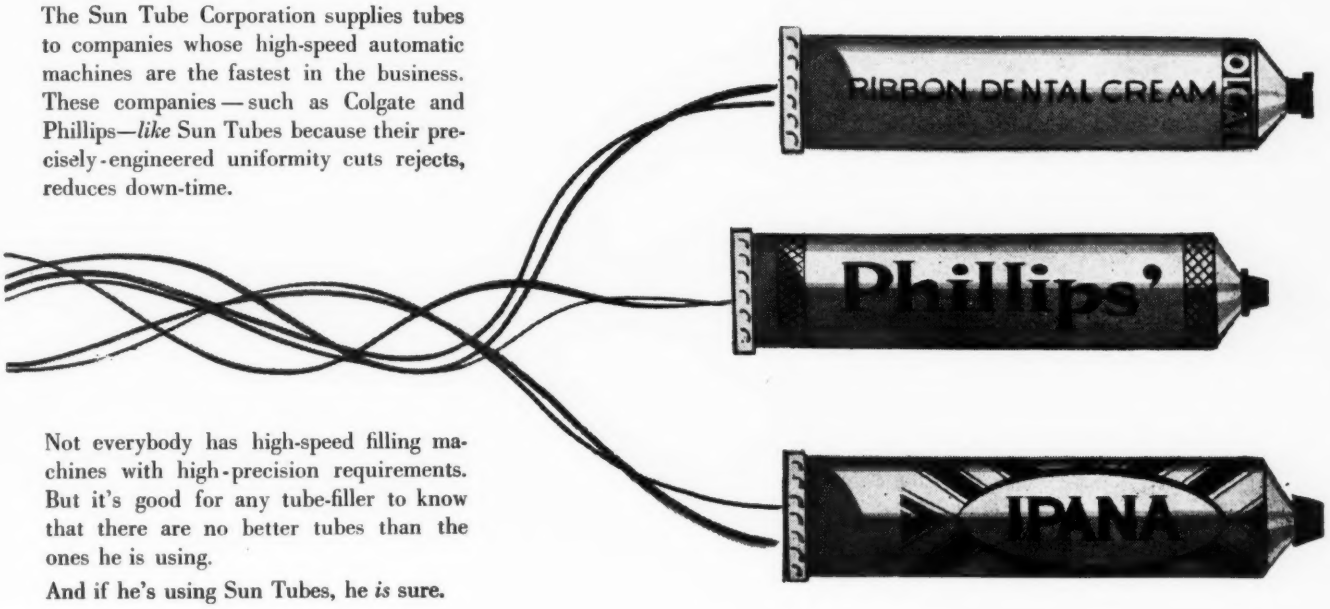
NEW YORK
342 Madison Ave.

DETROIT
1951 East Ferry St.

Downtime...

When a tube jams in a tube-filling machine, that machine is shut down, the line is stopped, delays pile up, money goes out the window.

The Sun Tube Corporation supplies tubes to companies whose high-speed automatic machines are the fastest in the business. These companies — such as Colgate and Phillips—*like* Sun Tubes because their precisely-engineered uniformity cuts rejects, reduces down-time.



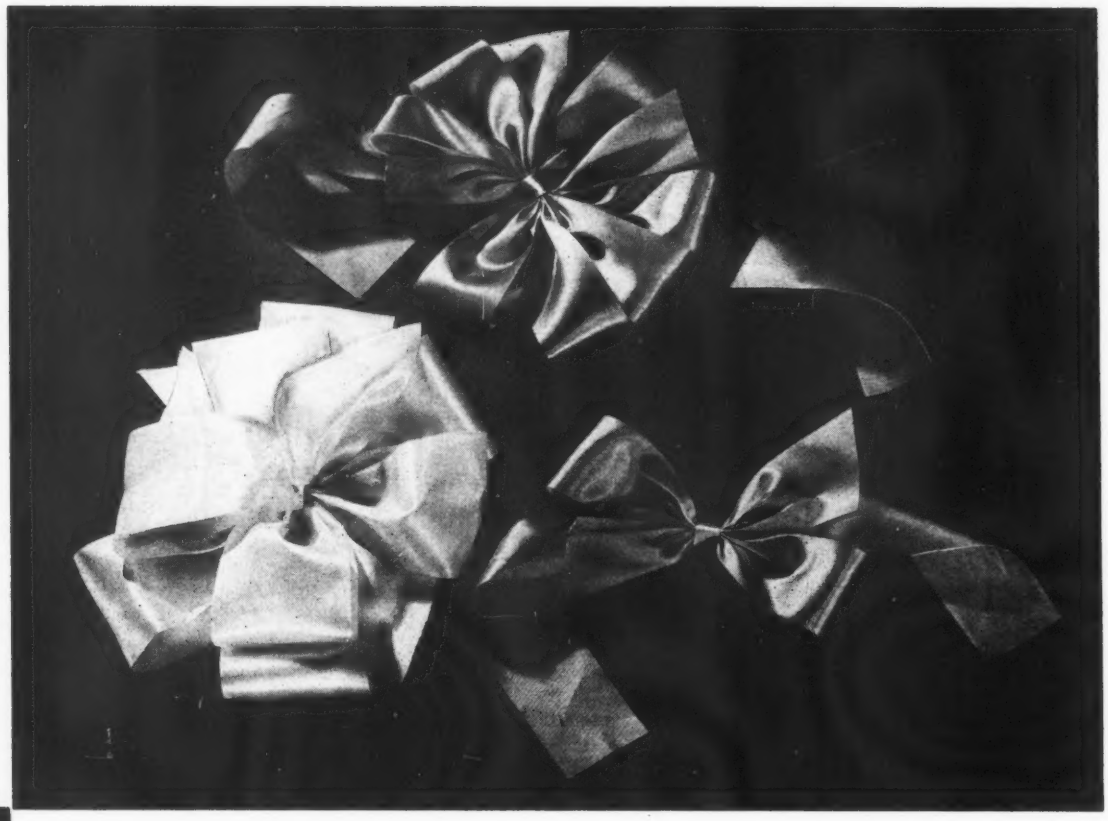
Not everybody has high-speed filling machines with high-precision requirements. But it's good for any tube-filler to know that there are no better tubes than the ones he is using.

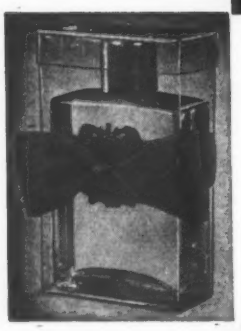
And if he's using Sun Tubes, he *is* sure.

Sun Tube Corporation

Hillside 5, New Jersey

CHICAGO 3, ILL., James L. Coffield, Jr., 105 West Adams Street
LOS ANGELES 27, CALIF., R. G. F. Byington, 1260 North Western Avenue
ST. LOUIS 1, MO., M. P. Yates, Arcade Building
ST. PAUL 1, MINN., Alexander Seymour, 615 Pioneer Building
CINCINNATI 8, OHIO, Ralph H. Auch, 3449 Custer Road





It will sell better with a Bow

TIE a real sales-clincher to your package for Easter, Valentine's Day or Mother's Day. Attach a luxurious bow or ribbon specially created to harmonize with your package, to match the festivity of the occasion.

A complete selection of bows and ribbons in all colors and materials is available from Rosebud. Or if you prefer, we will create a special bow to go with your merchandise.

Make that holiday package move.
Write or call today.

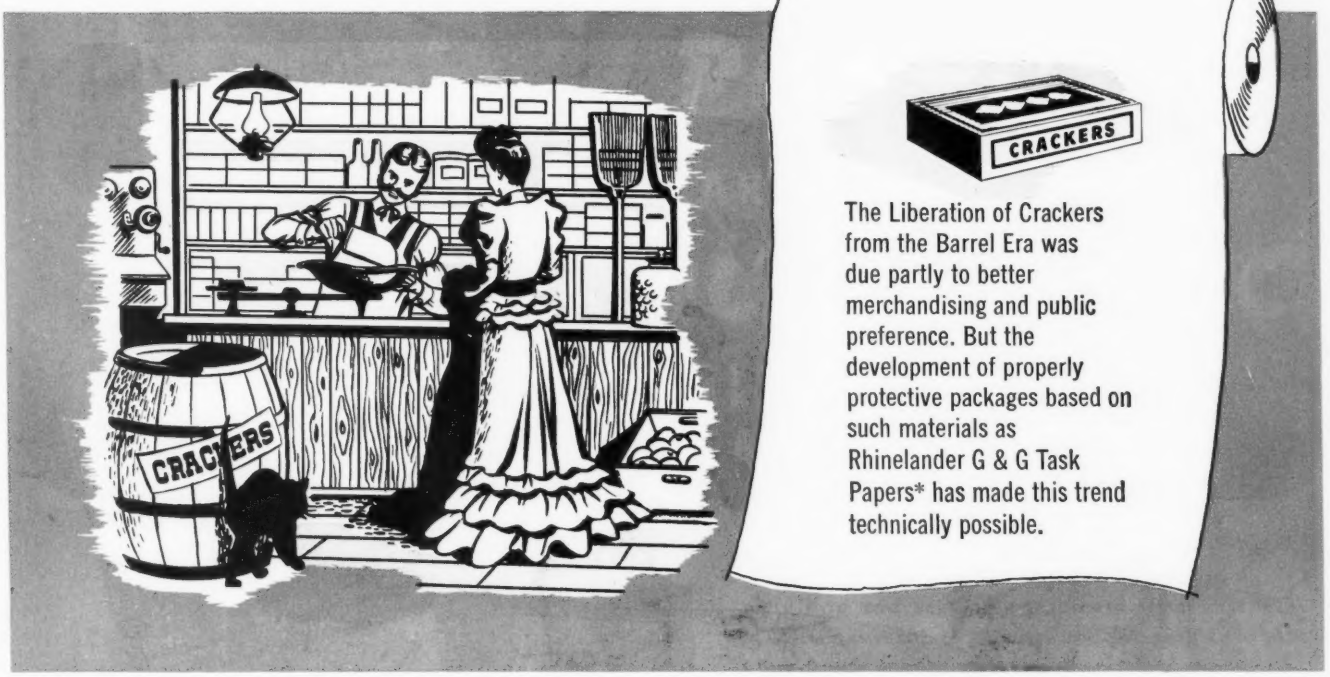
Enhance the sales appeal of your product. Highlight its package with a delightful bow or ribbon by Rosebud.

ROSEBUD MANUFACTURING CO.

874 Broadway, New York, N. Y.

Algonquin 4-5496

All in a Day's Work at Rhinelander



The Liberation of Crackers from the Barrel Era was due partly to better merchandising and public preference. But the development of properly protective packages based on such materials as Rhinelander G & G Task Papers* has made this trend technically possible.

Corn Chips!—that crispy, crunchy tidbit with origins in Old Mexico and now capturing the American palate are good almost in direct ratio to the moisture tightness of their package. Millions of bags for this tasty food are made of special Rhinelander protective papers.

Every Candy Lover is familiar with those pert little chocolate colored paper cups that hold bon-bons. This seemingly insignificant item has its own set of fussy technical requirements . . . all met perfectly by a custom built Rhinelander task paper.

A Very Special Grade of Rhinelander Glassine may have helped to "set" this table. In plastic molding a Rhinelander task paper serves as a seperator sheet . . . preventing plastic panels from sticking to each other or to the giant presses that form them.

**Glassine and Greaseproof—the functional papers that do so many tough jobs well*

Good Ham!—what a gustatory triumph and how dependably good as produced by our fine American Packers. Usually two G & G Task Papers* as made by Rhinelander assist in bringing each ham to your table in prime condition.

Remember the Stereoscope that once graced most parlor tables? Its successor, the View-Master, gives pictures full color and three dimensional fidelity. Color transparencies are mounted on discs of Rhinelander paper—a remarkable functional sheet of multi-ply lamination, coated for heat sealing.

Rhinelander
PAPER COMPANY

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There's been a
big S-T-R-E-T-C-H
in Textiles
America, once a nation of homespun and "linsey-woolseys," has become the world's greatest manufacturer of textiles. In fact, in 1946 alone, American mills produced the staggering total of $7,000,000,000 worth of goods.
From knit goods to nylons . . . from yarns to finished dresses . . . the growing textile business makes good use of corrugated containers. There's been a "Boxer's Rebellion" in the shipping end of the industry, and more and more textile men are putting their faith in modern corrugated containers. Corrugated containers are lightweight, durable, easy to handle, and economical.
For nearly 20 years MEAD has pioneered in the production of .009 Chestnut and other high-strength corrugating materials from hardwood fibres. Now, MEAD's hard-pressed facilities are being expanded to meet the demand of industry, and MEAD mills are doing everything possible to produce more corrugating board. MEAD board is sold direct by
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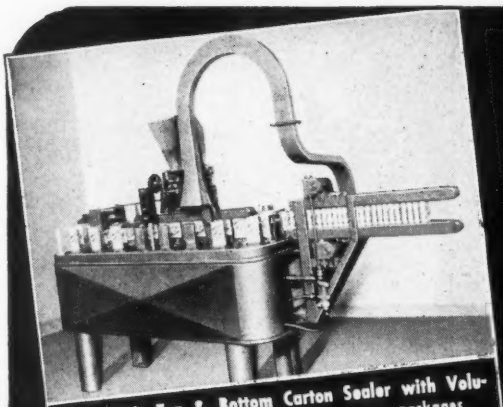
MEAD BOARD
SALES, INC.
3351 Madison Road, Cincinnati 9, Ohio

OUNCES TO POUNDS...

CARTONS or CASES

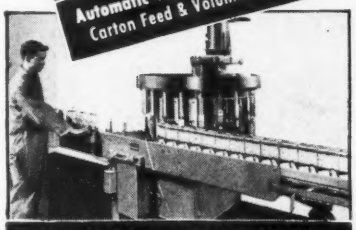
PACKOMATIC

FILLS, WEIGHS, SEALS AUTOMATICALLY

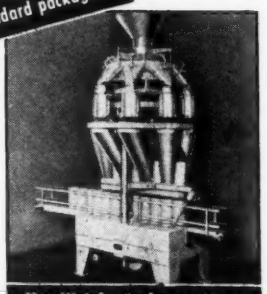


Automatic Top & Bottom Carton Sealer with Volumetric Filler for individual-serving--type packages.

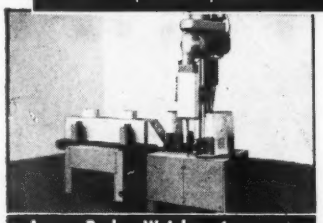
Automatic Top & Bottom Carton Sealer with Automatic Carton Feed & Volumetric Filler for standard packages.



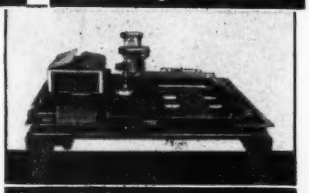
Automatic Telescoping Volumetric Filler for packaging semi- and free-flowing dry powdered products.



Net Weight Scale for filling round and rectangular metal, paper and glass containers.



Auger Packer-Weigher for semi- and non-free flowing products.



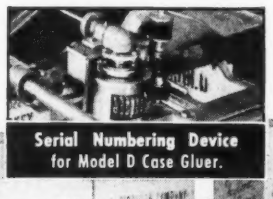
Automatic Case Imprinter for imprinting end or side panels (or both) of paper shipping cases

You get a wide range of package forming, filling, weighing and sealing equipment from PACKOMATIC—a wealth of package and shipping case handling know-how to save you time, labor, money.

If you have a packaging program up or contemplated, ask for PACKOMATIC'S recommendations before you commit yourself.

Package filling equipment for units from ounce to pound weights—shipping case gluing and sealing equipment in a wide range of case sizes—there is a PACKOMATIC to help you speed your wares to market. For more than a quarter of a century, PACKOMATIC has been working with America's top flight enterprises, and today some of the nation's best known product identities are being efficiently and economically handled by PACKOMATIC equipment.

You will find personal PACKOMATIC counsel available to you without cost or obligation through 14 strategically located contact offices. Consult your classified telephone directory for the office nearest you, or write J. L. FERGUSON CO., Joliet, Ill.



Serial Numbering Device for Model D Case Gluer.

Model D Automatic Shipping Case Gluer and Sealer.

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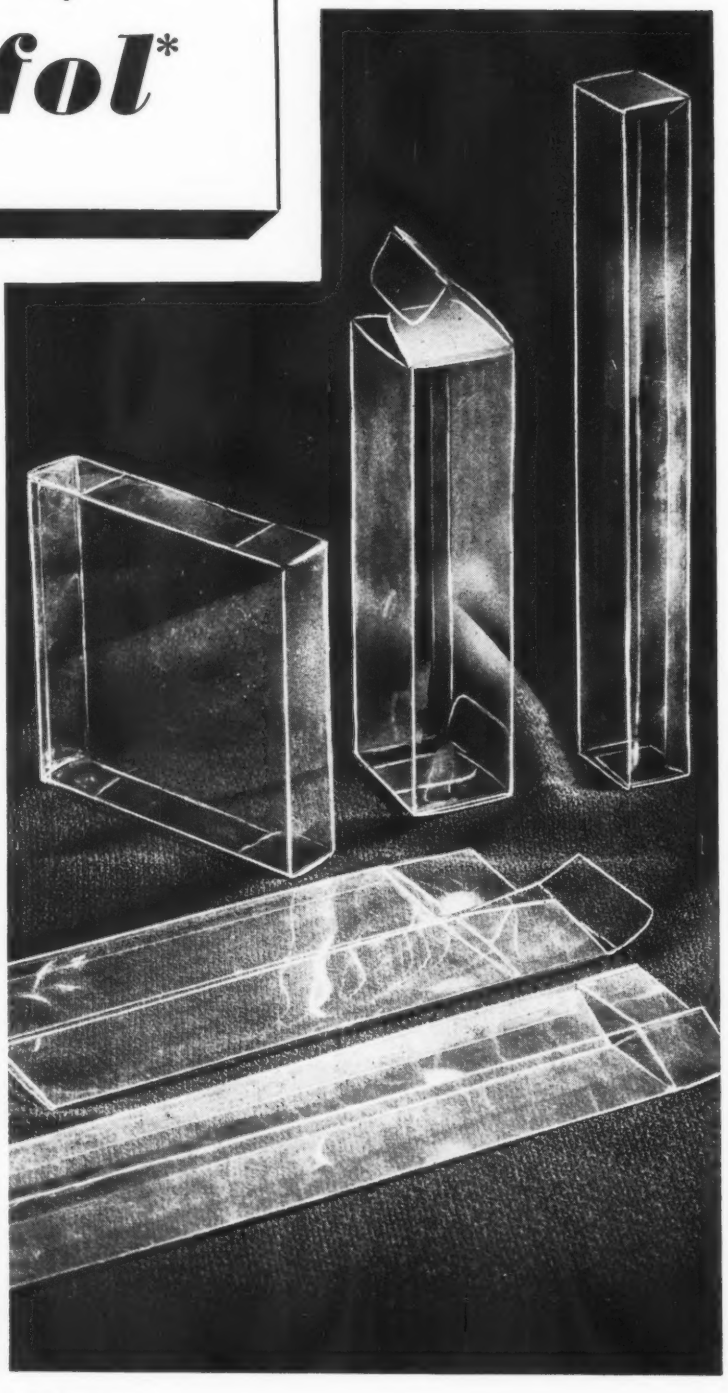
Ships flat . . . folds into shape in fractions of a second.

Available in large runs . . . tuck-end or glue-end.

Your message printed in permanent, scratch-proof color.



Now you can give your product all the extra sales appeal of individual packaging in transparent plastic cartons—at new low cost.

The new 100% transparent PLASTAFOL carton costs less per unit because it's mass produced by a patented process.

Folded flat for shipment, the PLASTAFOL carton saves freight—can be set up fast, by machine or by hand, with big savings in labor charges.

For very slight additional cost, we print your message on PLASTAFOL cartons in colors guaranteed not to scratch, rub or wash off.

Don't miss this new merchandising opportunity. Write today for information. We welcome comparison.

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Sales Office:
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The PLASTAFOL carton is protected by present and pending patents.

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GEAR
LUBRICANT
TEXACO Outboard Gear Lubricant will eliminate unnecessary drag on the engine, thereby insuring full power output and higher R.P.M. This lubricant is waterproof; it is free from artificial fillers and other injurious materials. It resists the tendency to leak out of the housing. Use it to protect gears in fresh or salt water.
Manufactured by
THE TEXAS COMPANY
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Contents 13 oz. net 0.369 kilos

for safer, easier, faster outboard motor lubrication

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Specialists in collapsible metal tubes and plastic closures, WIRZ may be able to help you, too, gain greater protection, convenience and appeal for your creams, pastes, powder, liquids. Let us discuss the possibilities. Write today.

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After a buyer has talked to a Continental man, he'll be convinced that a Continental container is the best money can buy. For solids, semi-solids, liquids, and dry bulk . . . hundreds of uses . . . there's a top-quality Continental container. They come in a wide variety of sizes, shapes and types for virtually every industry. Call on Continental when you want the best!

SPECIAL FEATURE: *Remember, Continental containers are built to last a long time. Your customers will find a lot of re-use value in them around the plant or farm.*

A COMPLETE LINE OF STEEL SHIPPING CONTAINERS

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And in this era of self-service merchandising the product that quickly shows its value at the point of sale is the one that appeals to the efficient shopper. That, dealers tell us, is why products in Cellophane move fast. Cellophane shows what it protects—makes a product its own best salesman.

E. I. du Pont de Nemours & Co. (Inc.), Cellophane Division, Wilmington 98, Delaware.

DuPont Cellophane

Shows what it Protects—at Low Cost

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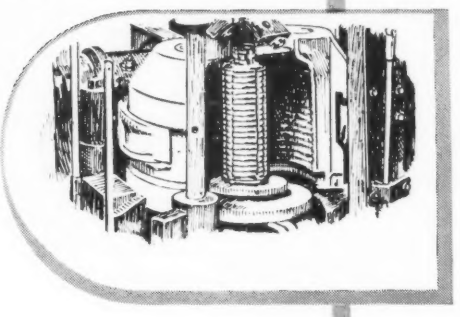

Skilled hands translate our package designers' drawings into realistic, full-size plastic or wooden models for the customer's approval. This is but one phase of the complete packaging service that Armstrong offers. If you need an entirely new package, or want to improve an old one, you can get complete recommendations from our design, research, and production departments.

With Armstrong planning your package as a complete unit, over-all harmony of appearance is achieved in a design that is tailored to your product and its market. By obtaining your glass container and closure—be it a crown, metal or molded cap, or cork—from one responsible source, you get time-saving service. Design suggestions also include, when desirable, a Du Pont CEL-O-SEAL* band. Contact your Armstrong representative or write direct to the Armstrong Cork Company, Glass and Closure Division, 6501 Prince St., Lancaster, Pennsylvania.

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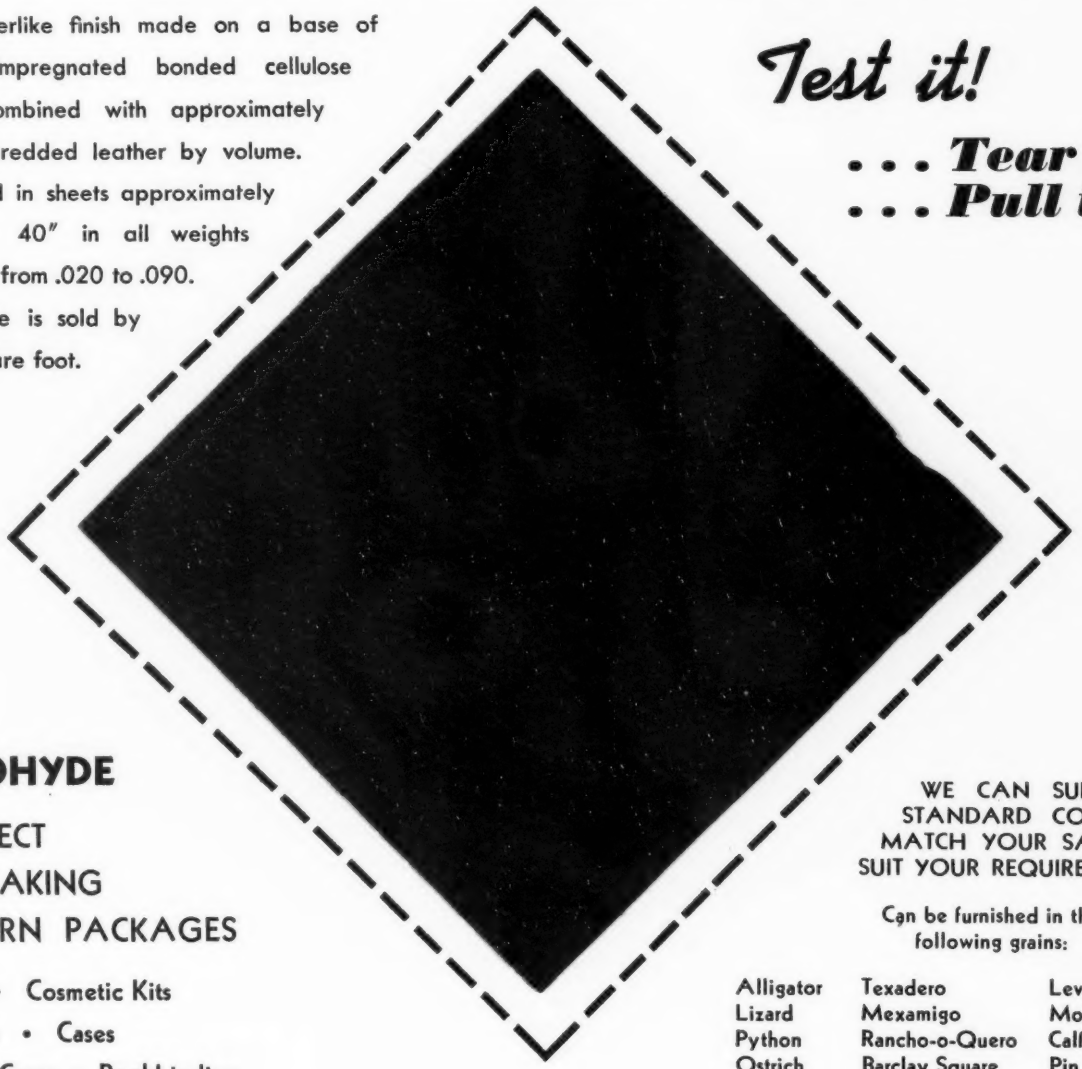

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by Traver . . .

HAM

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When special seasons require extra sales appeal against competing brands, put *your* ham in this glistening wrap and watch the buyers' pocketbooks pay homage to its charm.

Stock designs (Tulip and Lily) are available for immediate delivery.

. . . and with the beauty of Traver Aluminum Foil wrappers, you are assured protective strength by heavy paper backing.

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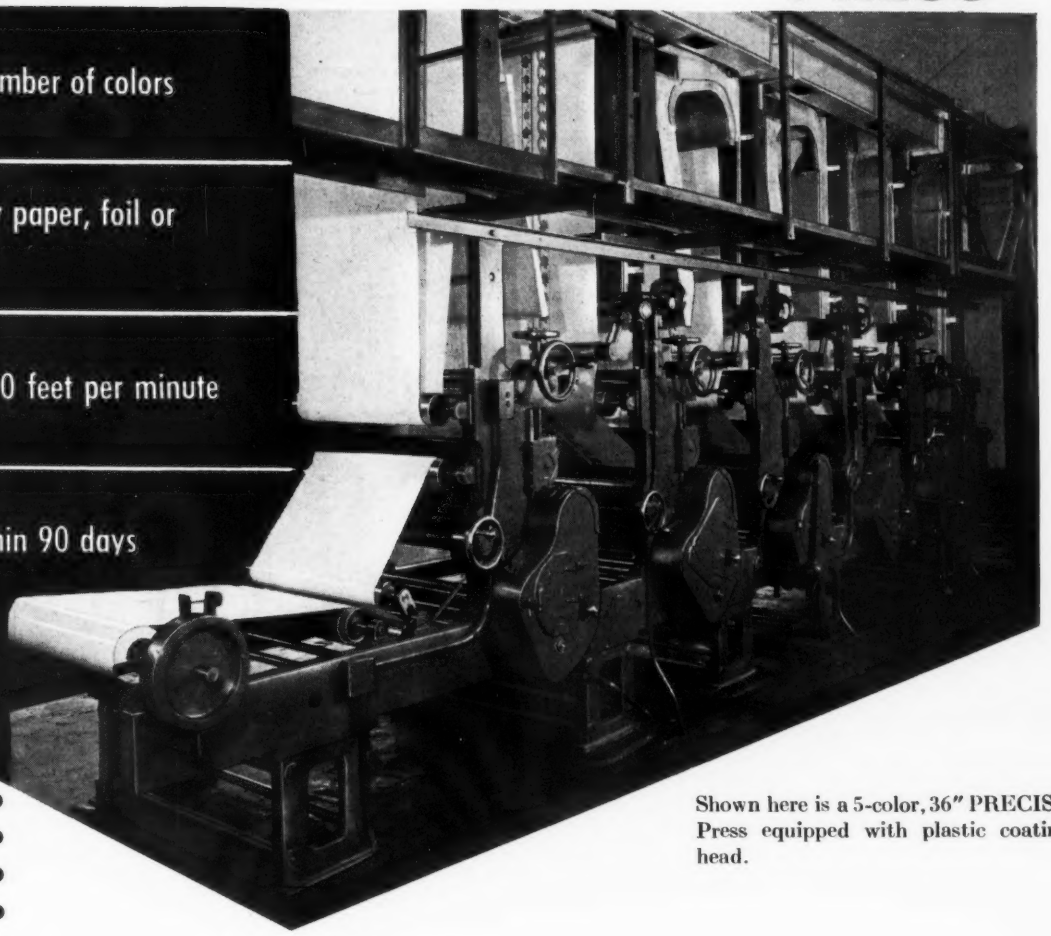

Shown here is a 5-color, 36" PRECISE Press equipped with plastic coating head.

HERE'S why the PRECISE* is the high-speed rotogravure press you've always wanted. It prints on almost any grade of paper—carton stock, foil, cellophane, glassine, waxing. It prints solid colors or halftones or combinations of both. It's fast—speeds of 400 to 500 feet per minute. It's accurate—not only is perfect register maintained at any speed, but motorized rubber pressure rolls automatically insure correct printing cylinder pressures.

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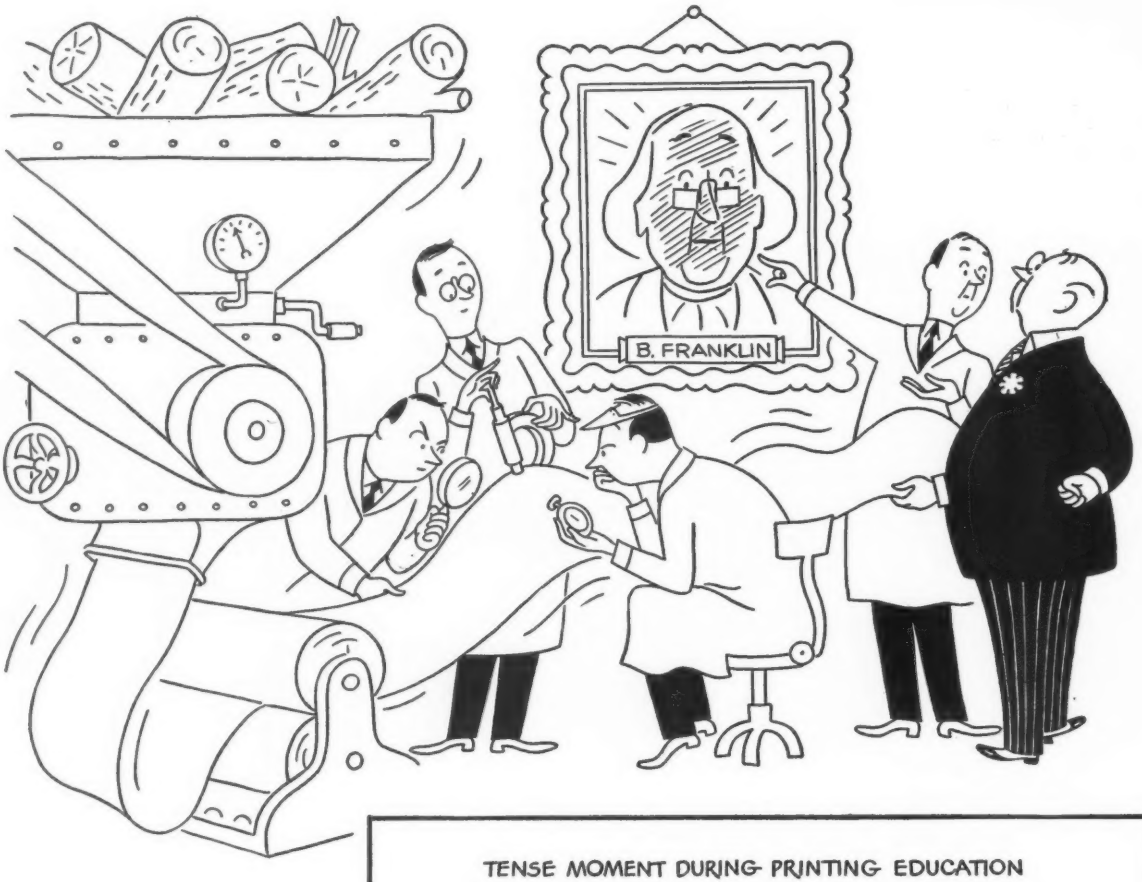
Near Crisis at Oxford Paper Company by Tony Barlow



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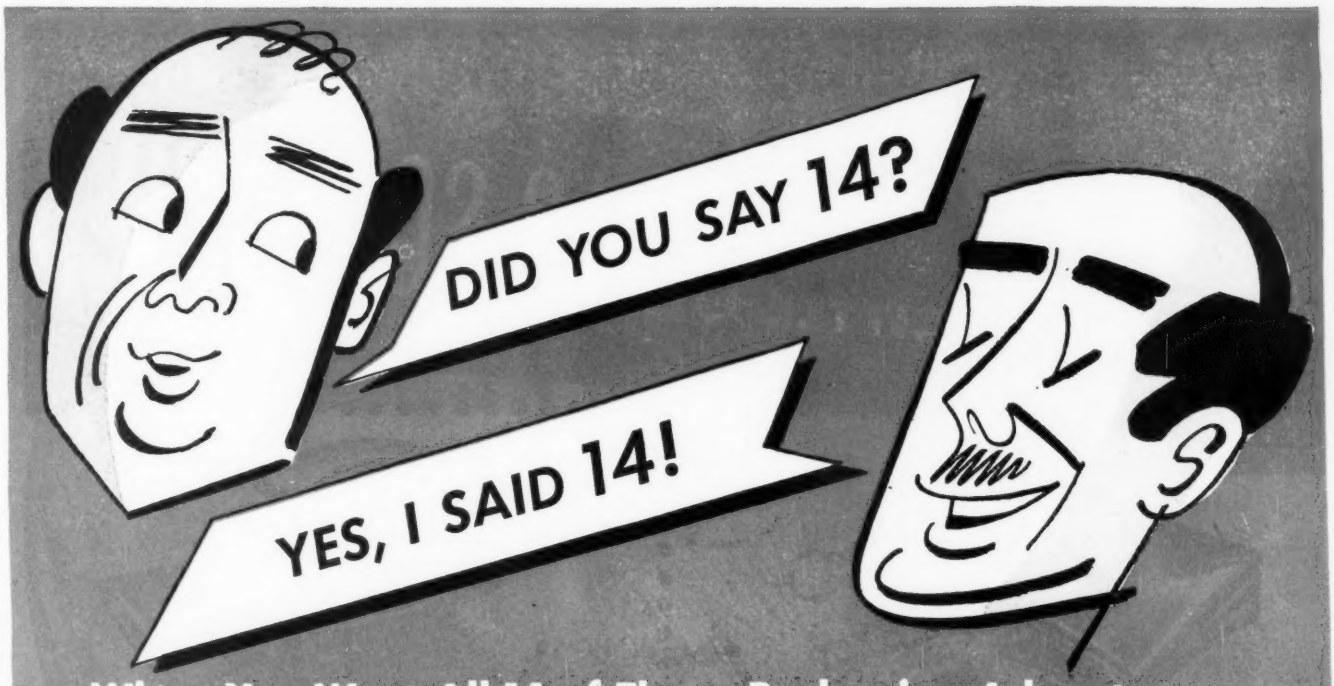

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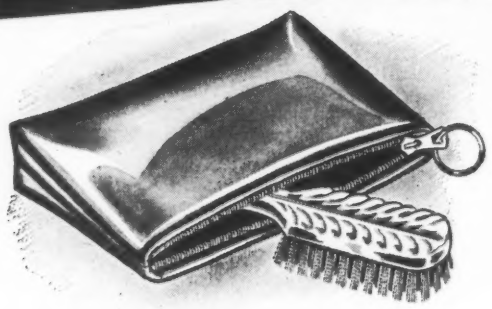

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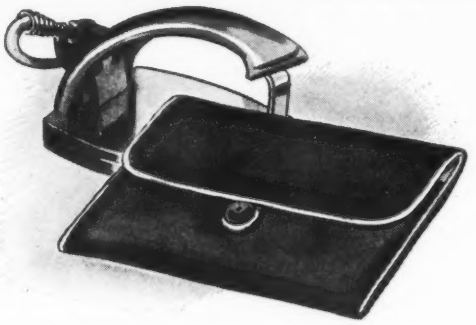
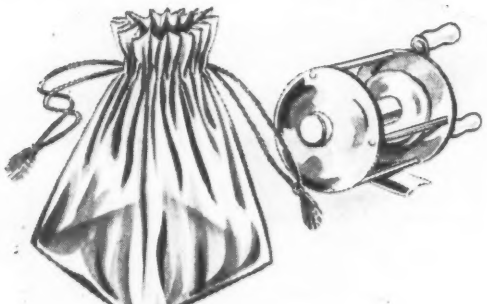


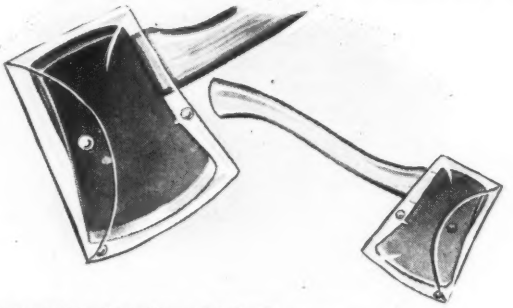
SIMULATED LEATHER and other plasticized materials make luxurious containers for many products.

as low as 14¢ each



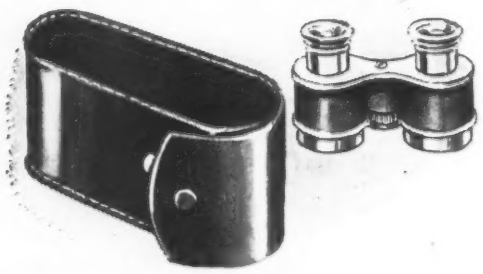
STRING POUCHES in translucent vinyl film and other materials. Some water-proofed All sizes.

as low as 6¢ each



TRANSPARENT CASES, heat or electronically sealed, make excellent point-of-sale containers and a really practical carrying case.

as low as 4¢ each



RIGID CONTAINERS with button, clasp or slide closings. All shapes and materials.

as low as 8¢ each

SEND US a sample of your product and our design department will create a sales compelling package for you without obligation on your part.

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PRODUCTS COMPANY

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MOVE hard-to-move merchandise

PROMOTE related sales

ESTABLISH year 'round demand

STOCK BOXES OF *transparent* LUMARITH*

MAKE BUSINESS LOOK BETTER

Chains and variety stores are using stock boxes of transparent Lumarith to step up sales volume in standard merchandise, and promote year 'round turnover in many seasonal lines.

Low in cost, these gift type containers employ the eye appeal of transparency to move more goods faster and with fewer trips to the cash register . . . move them in combination . . . move slow selling items by packaging them with fast sellers . . . utilize counter help for packaging in slack hours . . . make more sales through attractive counter displays.

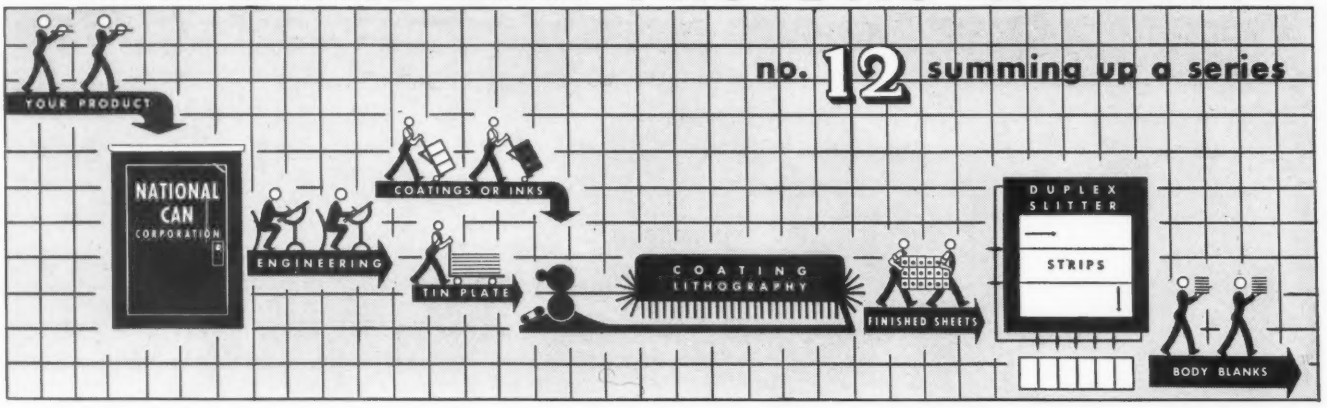
Stock boxes of transparent Lumarith are available in a variety of sizes and styles. If you are interested in this packaging-merchandising method, write us for names of container manufacturers.

CELANESE CORPORATION OF AMERICA,
Plastics Division, Dept. P1, 180 Madison Avenue, N. Y.

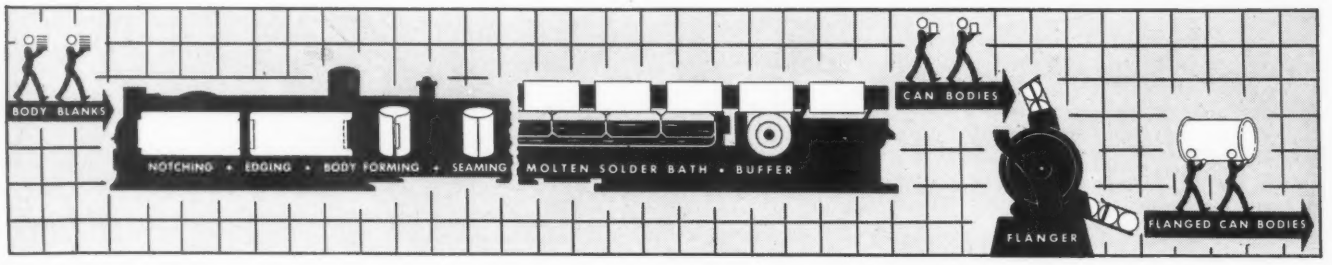
*Reg. U. S. Pat. Off.

*Celanese** *Plastics*

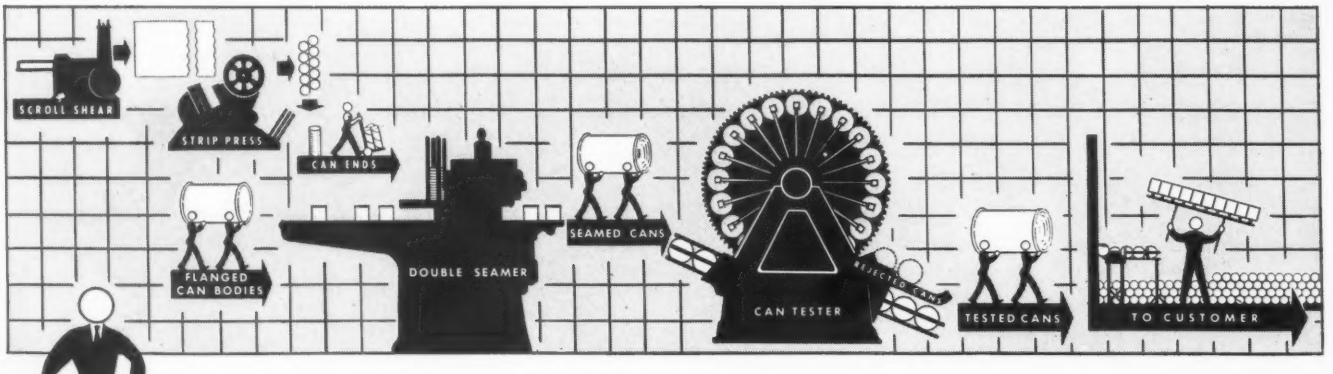
FROM DESIGN TO DELIVERED PRODUCT
NATIONAL CAN PROTECTS QUALITY



.. ITS ENGINEERING AND ART SERVICES ARE AT YOUR DISPOSAL . . . IT MAINTAINS HIGH PROTECTIVE COATING AND LITHOGRAPHING STANDARDS . . . SLITTING METHODS INSURE UNIFORM BODY BLANKS



. . . ITS CAREFUL BODY FORMING HELPS MAKE TIGHT UNIFORM CONTAINERS . . . ITS THOROUGH SIDE-SEAMING INSURES TIGHTNESS . . . IT FLANGES CAN BODIES UNIFORMLY ON BOTH ENDS . . .



. . . THE WAY WE MAKE CAN-ENDS IMPROVES PACKERS' OPERATIONS . . . DOUBLE SEAMERS PRODUCE UNIFORMLY TIGHT SEAL . . . TESTING AUTOMATICALLY REJECTS ALL BUT AIR-TIGHT CANS . . . CAREFUL HANDLING AND PACKING PROTECT CANS ALL THE WAY

ITS PERSONALIZED SERVICE HELPS CUSTOMERS IN THEIR OWN PLANTS

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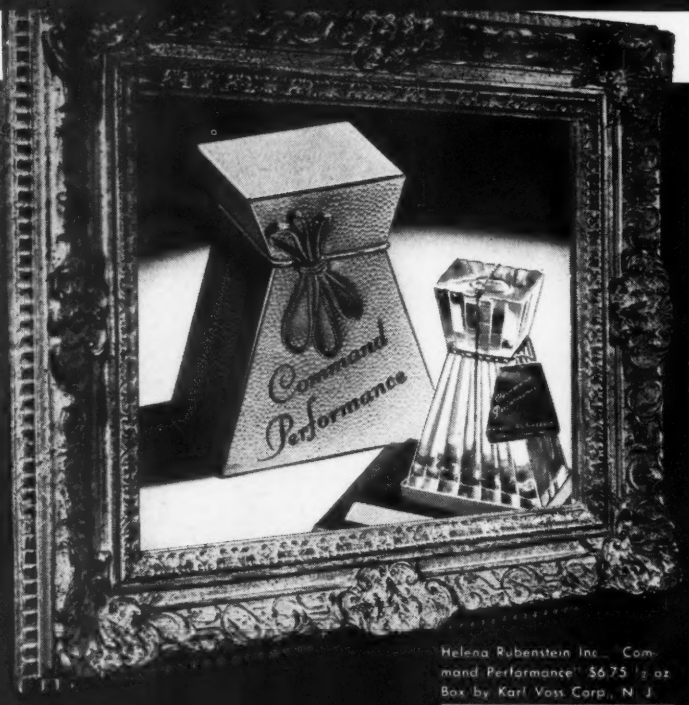
pictures at an exhibition—facil-fab* in use!



Helena Rubenstein Inc., Command Performance, $6.75 ½ oz. Box by Karl Voss Corp., N. J.

Coty Inc., Gift Set, $5 retail. Box by Wallace Paper Box Corp., N.Y.

Schick Super Shaver, $18 retail. Box by Farrington Mfg. Co. Boston

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GET YOUR COPY NOW

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Subject Index—Alphabetical (Products, etc.)
Materials & Suppliers Section
Container Manufacturers Section
Marking & Equipment
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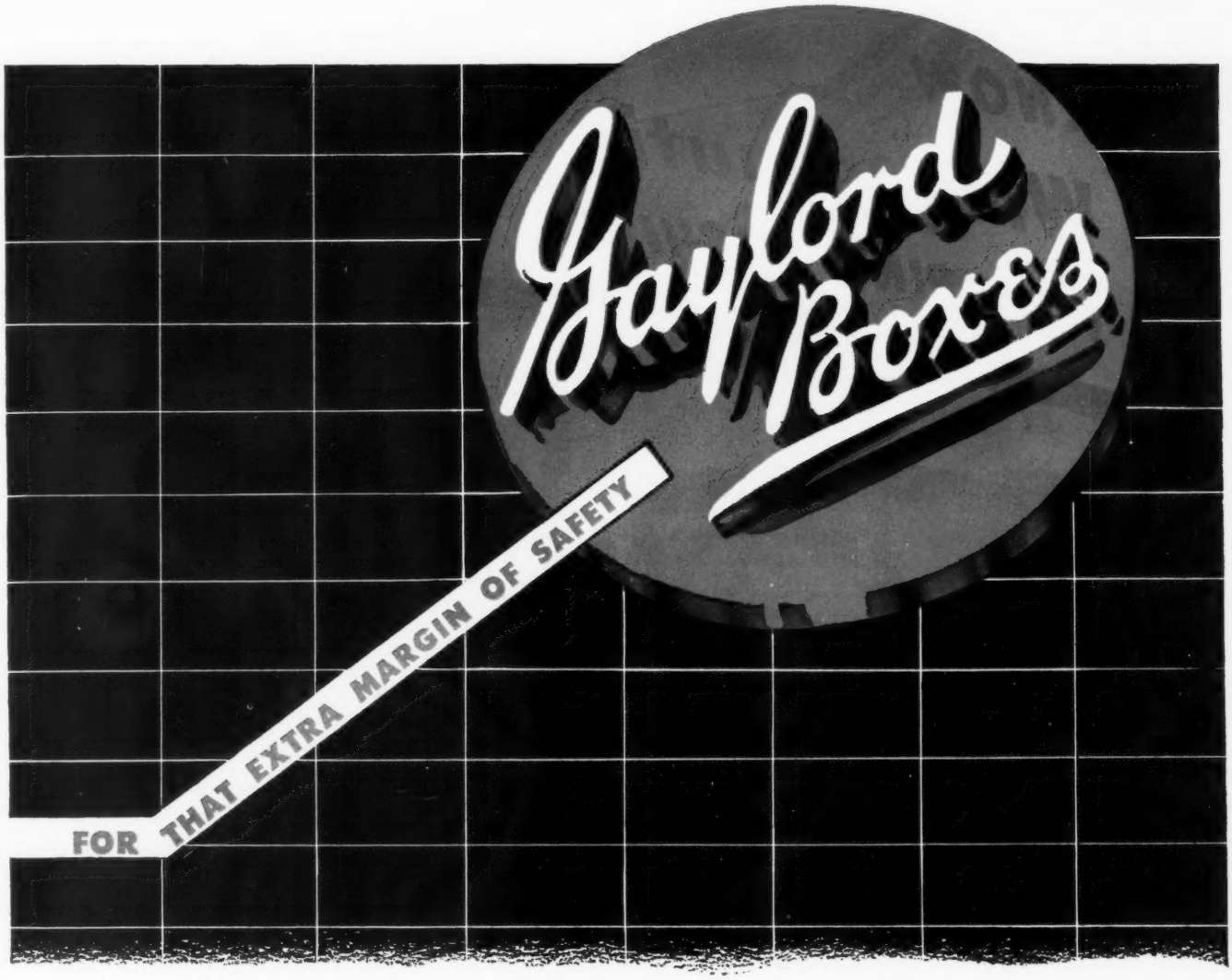

Every step in handling—from your production line by truck, train, ship, or plane to the retailer and consumer is a challenge to the container that protects your product.

Gaylord correct functional design, better materials, and precision manufacturing provide that vital *extra margin* of safety.

Call or write the nearest office.

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- Folding Cartons
- Kraft Grocery Bags and Sacks
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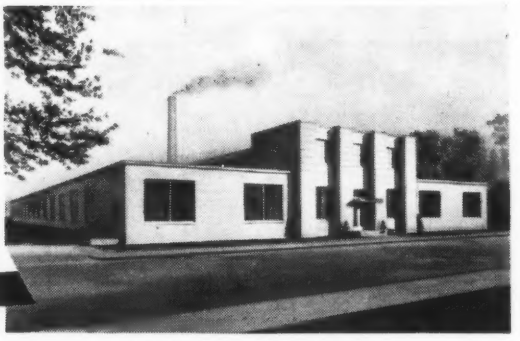
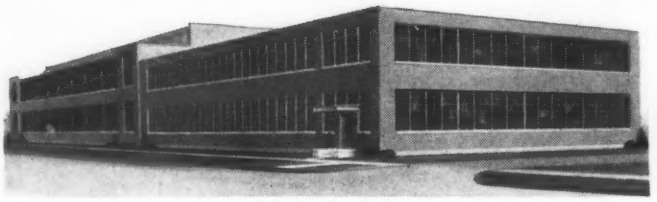
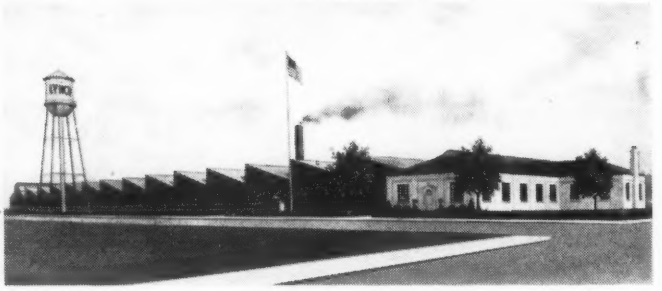


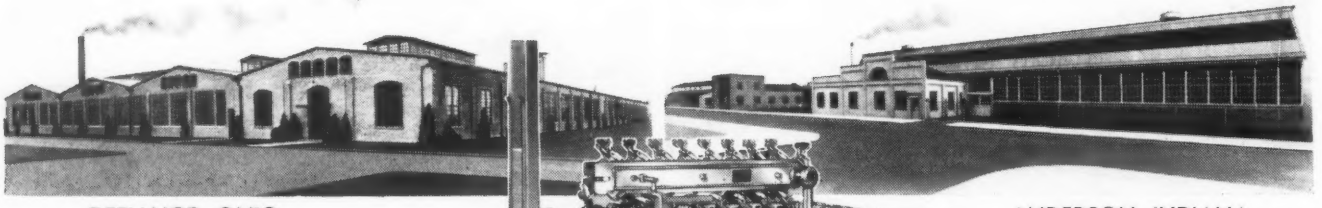
MARION, INDIANA



TOLEDO, OHIO

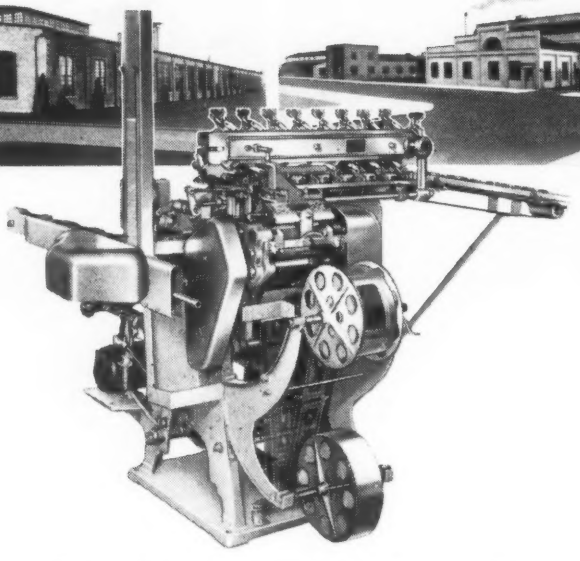


ANDERSON, INDIANA



DEFIANCE, OHIO

ANDERSON, INDIANA



These five modern plants, equipped with complete engineering departments and latest type production machines, comprise the manufacturing facilities of the Lynch Corporation, manufacturers of Wrap-O-Matic Wrapping Machines. Our many years of experience in the development and manufacture of precision machinery is transmitted into every Wrap-O-Matic Machine. For wrapping candy bars, biscuits, and cookies, Wrap-O-Matic is the most popular wrapping machine in the confectionery and bakery fields . . . high speed wrapping up to 120 units per minute at a savings up to 75% in wrapping labor and 35% in wrapping material. Know Wrap-O-Matic . . . send samples of your products and ask for illustrated literature.

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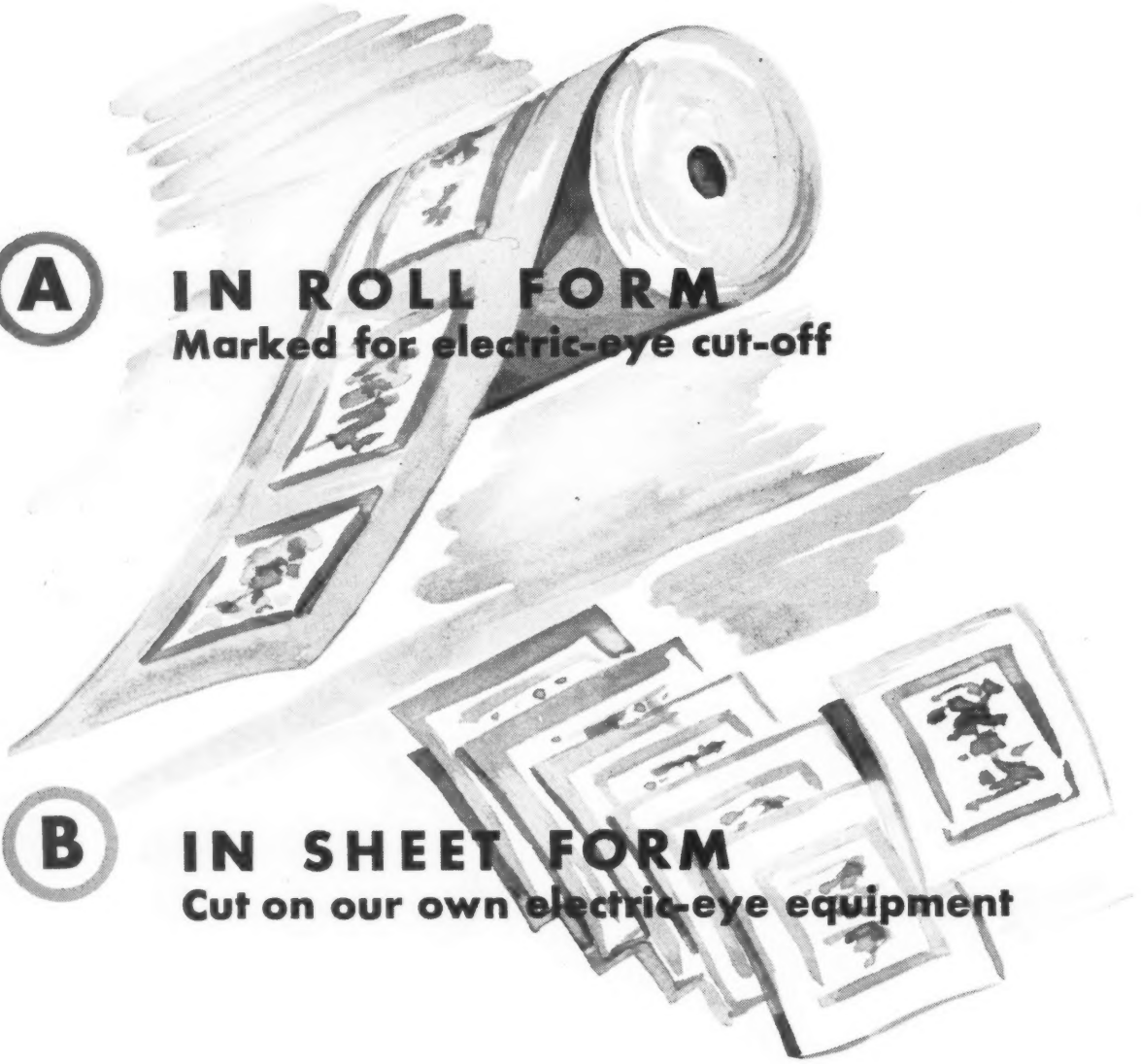

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Marked for electric-eye cut-off

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Cut on our own electric-eye equipment

Paper of this type may be printed to any repeat up to 36 in. wide and in one, two, three, or four colors by gravure. Dress up your packages by having the layout printing an integral part of the overall design. Your inquiry is invited.

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September 9, 1947

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New Jersey Machine Corporation
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Hoboken, New Jersey

Attention: Mr. Peter Heguy (Please forward to new territory)

Dear Sir:

Just a note to congratulate you on your transfer and to let you know that our machines are coming along nicely only instead of from 40-45 per minute on the 4 ounce size after three days we are doing 54 which is all right with us.

Lots of Luck.

Very truly yours,

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Tom Glynn + John Leavey

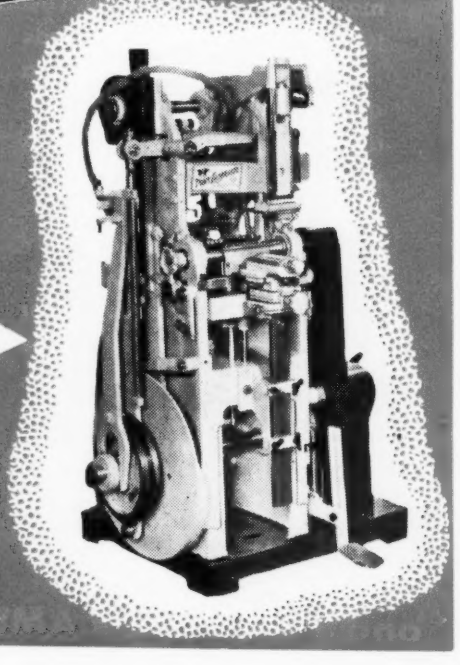
Thomas M. Glynn
Production Manager

TMG/dav

NJM CORP.

PERFECT REGISTRY IN LABELING BY THE VACUUM METHOD

with full surface adhesion



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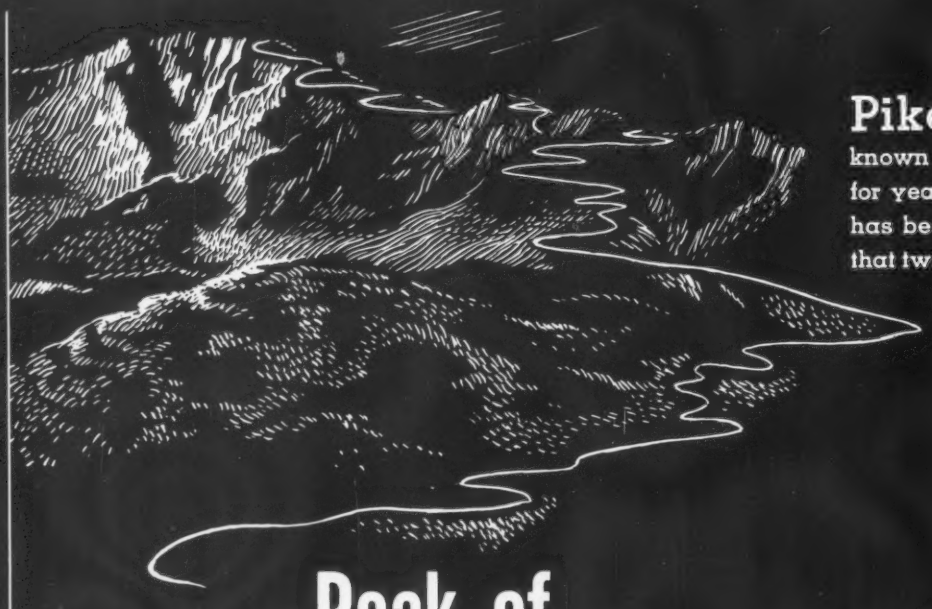

Pikes Peak . . . Possibly the best known mountain in the United States. Here, for years, the dependability of automobiles has been tested on its 18 miles of highway that twists and turns to its peak, 14,110 feet up.

Peak of dependability . . .

WHERE an airtight, leakproof seal is necessary, you can depend on an Anchor Amerseal Cap. Equally spaced, double notched, specially formed lugs draw the liner down into a uniformly tight contact with the full 360° of the container finish. Their knife-like action makes it easy to break the contact, even when sticky, gummy products are packed. Liners will not fall out and will not stick to container finish when the cap is removed. They are free to rotate and seat at first contact, giving longer life when frequent reseals are necessary. Cap application by hand or machine is simple, fast and economical . . . no adjustment or matching of threads . . . starts at any point and a *quarter turn* seals. A dependable cap will deliver your products in perfect condition . . . make them easily accessible . . . protect them until entirely consumed . . . and create consumer preference for them. For the Peak of Dependability in the original seal and *every* reseal, use Anchor Amerseal Caps.

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CONTAINERS and CAPS

PRODUCTS OF
ANCHOR HOCKING GLASS CORPORATION
LANCASTER, OHIO

and it's ANCHOR AMERSEAL CAPS for the Peak of Dependability

"Crime Photographer", Thursday evenings, entire CBS network, sells all America on glass-packaged products.

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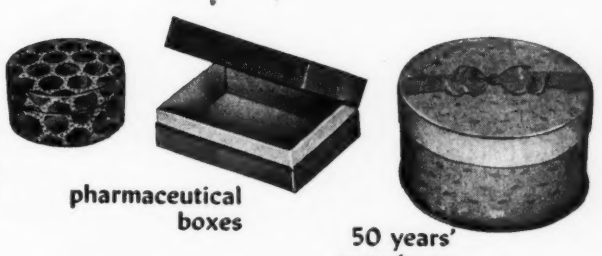
On the Champs-Elysees... Fifth Avenue . . . Wilshire Boulevard . . . Rowell adds exciting charm to cosmetic boxes for face and dusting powder.

Sleek, gay, and attractive, they catch the feminine eye and find their way into the tailleur of the most sophisticated.



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pharmaceutical boxes

50 years' experience

E. N. Rowell Co. Inc.

Manufacturers of Fine Paper Boxes

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PACK IT IN

HEEKIN

Lithographed

CANS

HEEKIN manufactures all types of cans—with or without lithography for every industry. Heekin colorful metal lithography puts sales-appeal into your package. Now is a good time to talk about next year—and the year after—and you'll find that Heekin sales representatives know metal lithography from package design to prompt delivery. We are always glad to talk about lithographed cans . . . whether you are just beginning to use metal cans or a successful old timer with coast-to-coast distribution.

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SAVES

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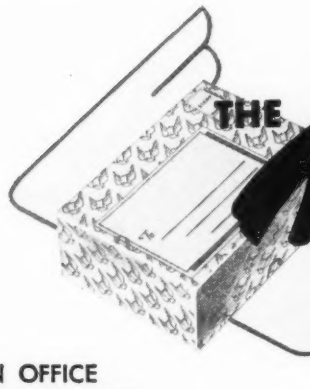
TAPE

TIME

● Yes, Mason MailMaster's patented safety clasp closure saves wrapping—saves time. You simply place your small product or part in the box (with standard inserts for extra protection), secure the cover with the wire clasps, and PRESTO—it's ready for the mails.

This built-in, time-saving feature means money saved, too. For quick deliveries help to satisfy customers and satisfied customers mean repeat sales—more profits for you.

So investigate Mason MailMasters today. Write Dept. 81 for complete catalog of sizes.



THE Mason BOX COMPANY

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ATTLEBORO FALLS, MASS.

FACTORIES
ATTLEBORO FALLS AND TAUNTON, MASS.

NEW YORK OFFICE
175 FIFTH AVE.

MANUFACTURERS OF AMERICA'S NUMBER ONE BOX.....THE MASON MAILMASTER

Treasures..

PACKAGED BY *Smithcraft*

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Cherished as the finest and most durable of quality re-use containers. Designed and manufactured to suit your product and sell your market.

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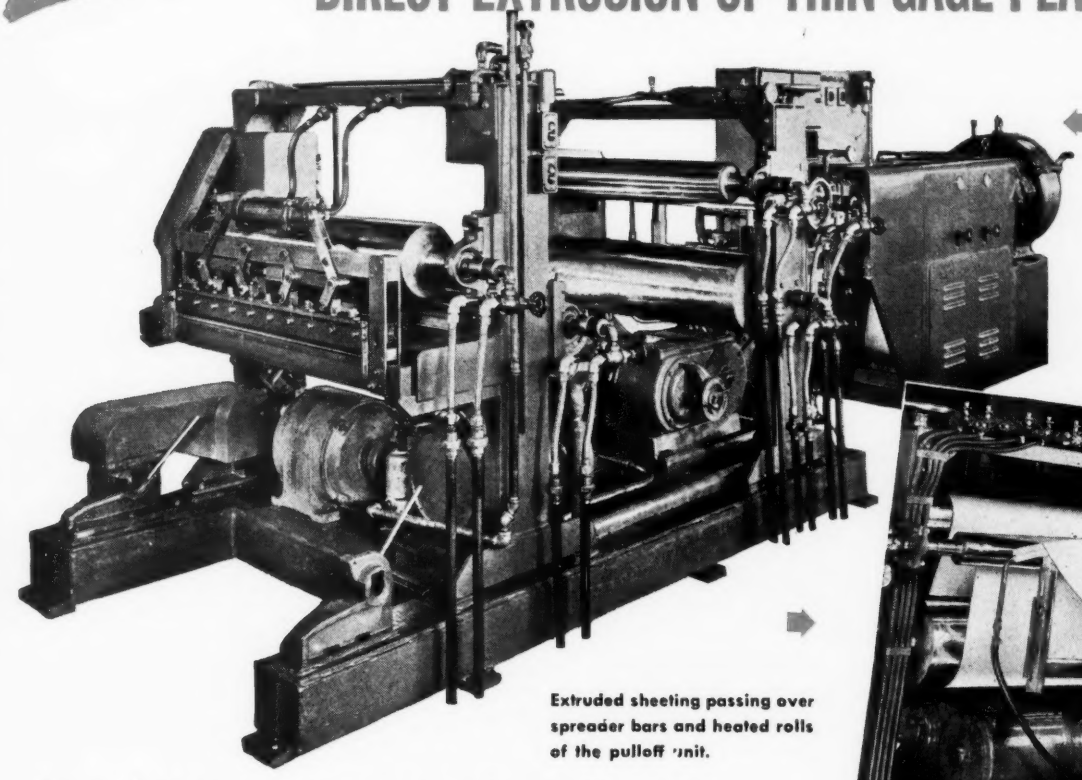
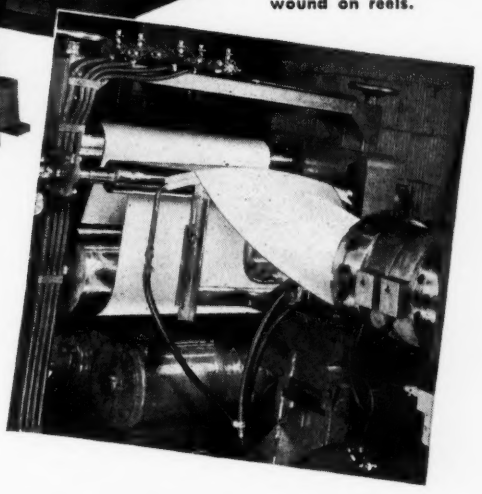
NOW! for packaging . . .

DIRECT EXTRUSION OF THIN-GAGE PLASTIC SHEET



Complete NRM Direct-Process Sheeting Unit; including 3½" extruder, special sheeting head, with cooling and pulloff unit equipped with automatic cutoff and continuous windup. Finished product can be cut into sheets or wound on reels.



Extruded sheeting passing over spreader bars and heated rolls of the pulloff unit.

Costs Slashed, New Markets Created by NRM Direct-Process Extruder and Pulloff Equipment

NOW, for the first time, an equipment manufacturer is able to offer the packaging industry a complete, full scale production unit for the direct extrusion of acetate and other types of thin-gage plastics sheet.

Here's what that means:

1. **Production costs are drastically cut . . . as much as one half; unit will produce up to 150 lbs. of finished sheet per hour;**
2. **New markets, new products, and new uses for established products are made possible;**
3. **Thin-gage sheet output is greatly increased per dollar of capital investment, or:**
4. **Substantially less investment is needed for a given output of product;**
5. **Produces directly extruded material up to 22 inch trimmed width, 8 to 45-thousandths thickness. *(Larger head for 36 inch wide sheet can be made available.)***

The NRM Direct-Process sheeting unit is rugged, compact, requires a minimum of floor space. It consists of a 3½" NRM extruder and special sheeting head, plus a cooling and pulloff unit with automatic cutoff and continuous windup for 36 inch untrimmed sheets. It is built by National Rubber Machinery Company, America's foremost designer and manufacturer of plastics extruders and extrusion equipment.

If you've been waiting for a practical, low-cost method of thin-gage sheet production, here's your answer.

For full information, including photographs, specifications and floor layouts write us today.

NATIONAL RUBBER MACHINERY CO.

General Offices: AKRON 8, OHIO

California Representative: Sam Kipp, P. O. Box 441, Pasadena 18, Calif.

Plastics MACHINERY DIVISION

EXPORT DISTRIBUTORS: OMNI PRODUCTS CORPORATION, 460 FOURTH AVE., NEW YORK 16, N. Y.

with a *Watson-Standard* coating

Your need for a paper or foil coating which is beautiful, durable and easy to work with can be furnished by Watson-Standard. Whether you require a coating which is chemically inert, water and weatherproof, non-toxic, tasteless, dull or glossy—whatever your requirements, Watson-Standard can produce the coating you want. Just give us your specifications and production processes and we'll supply the answer.

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Prescription Finishes
Give us your metal coating problem. We guarantee you an answer based on your conditions, and not just a standardized formula.

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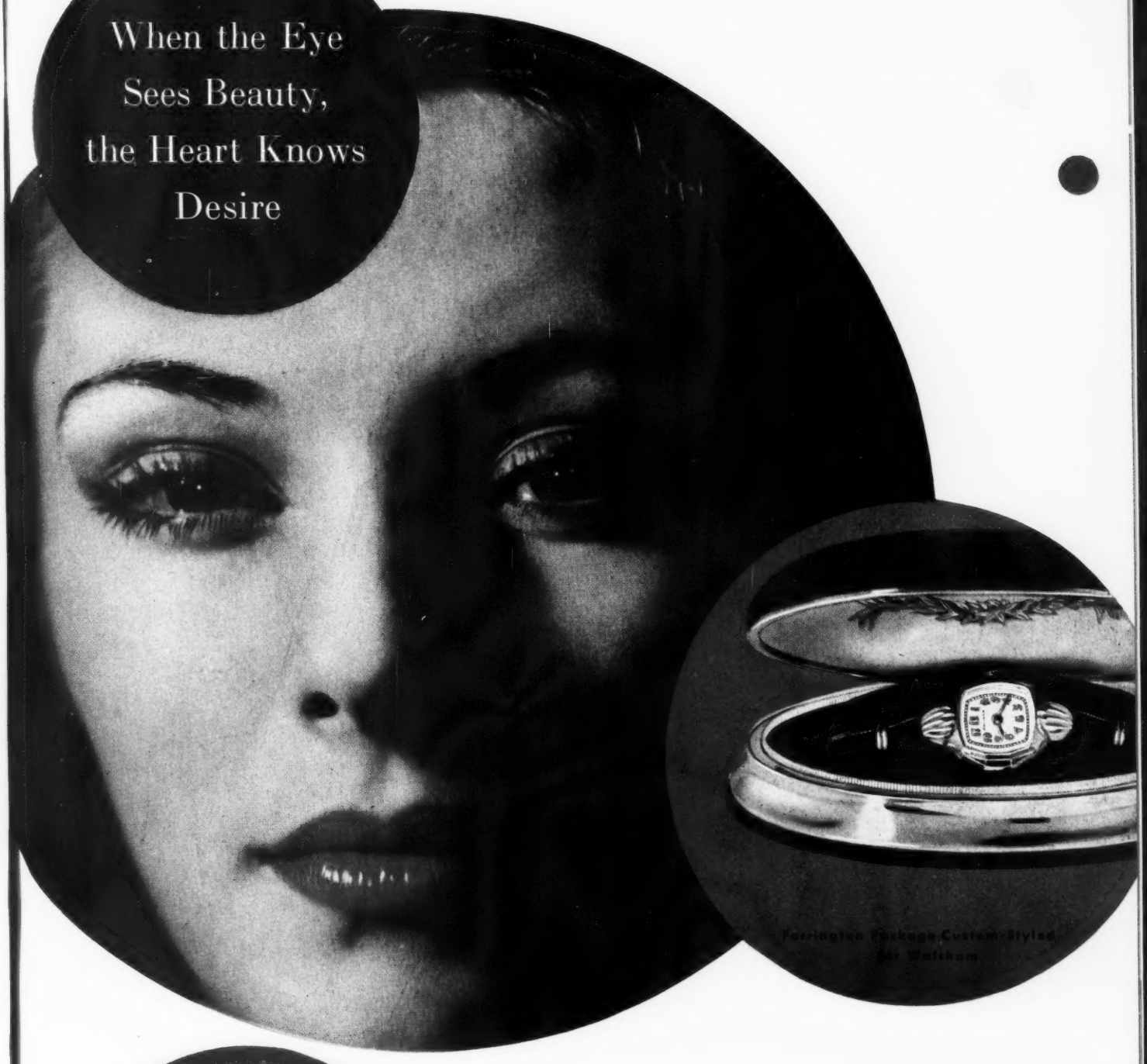
WAREHOUSES: BOSTON, BUFFALO, DETROIT, NEW YORK

When the Eye Sees Beauty, the Heart Knows Desire



Farrington Packaging Custom-Styled for Waltham

Farrington Packaging

says "Custom Quality" in an Elegant, Eloquent Way

Creation of the aura of fineness is aided by custom packaging. For a product's deep-seated inner quality is often reflected by that which is visible. . . . Many years' production of Waltham's watchmaking genius has found its way to the show windows of America's fine jewelers, and into the hearts and lives of people everywhere—"Packaged by Farrington"... Other fine products, too, such as jewels, surgical instruments, precision gauges, pens and pencils are carried, displayed and protected by Farrington Packaging that's conceived, designed, engineered and constructed to do special jobs . . . This is a type of distinctive *showmanship* that can help boost desire for *your* product . . . Let us confer soon on your current and anticipated packaging problems.

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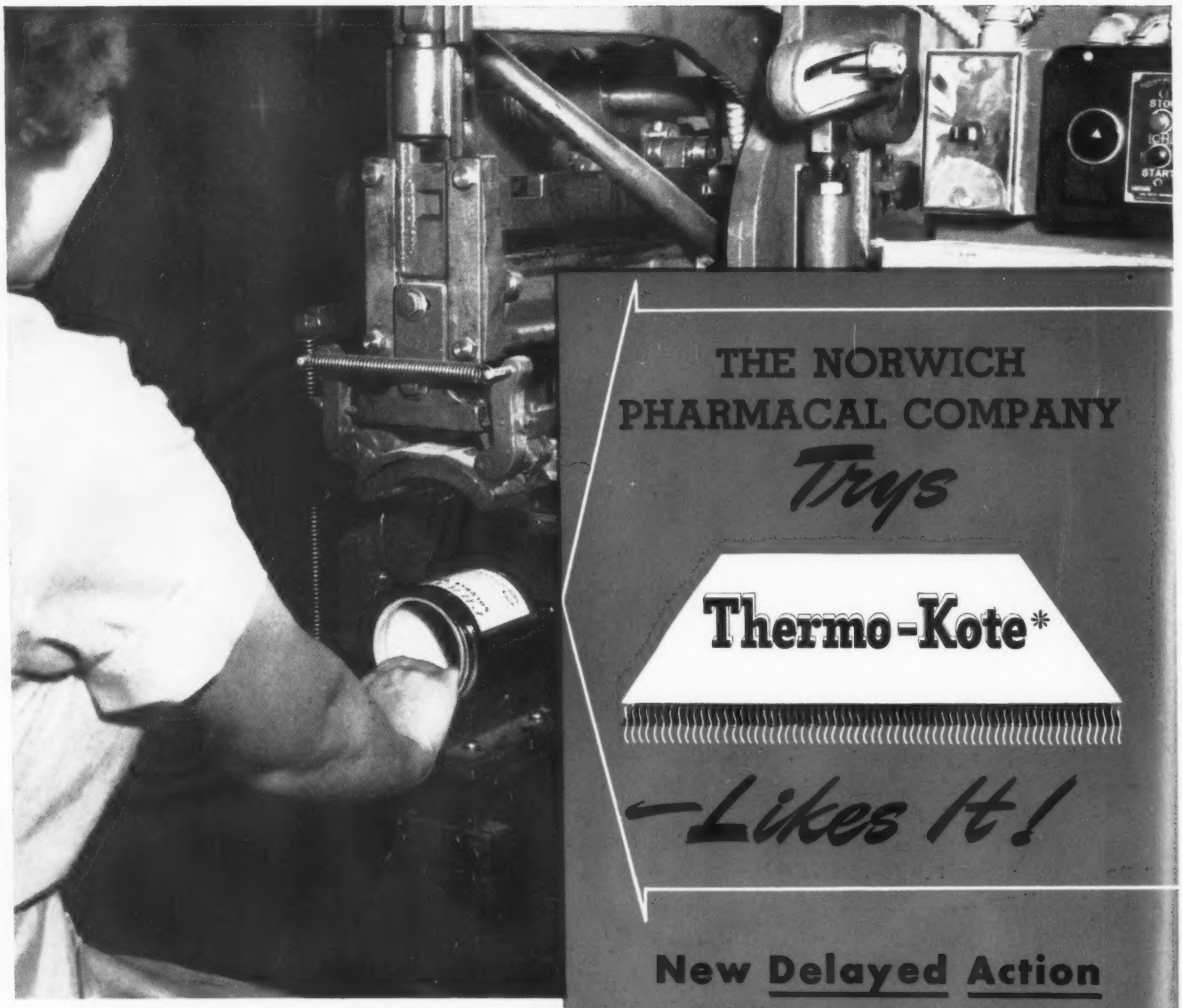
General Offices: 76-P Atherton St., Boston 30, Mass., Canadian Plant: Farrington Mfg. Co., Ltd., 1191 Bathurst St., Toronto 4

SPECIALTY BOXES · DISPLAY TRAYS · METAL SPECIALTIES · CHARGA-PLATE SERVICE



THE NORWICH PHARMACAL COMPANY *Trys*

Thermo-Kote*

—*Likes It!*

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Modern packaging

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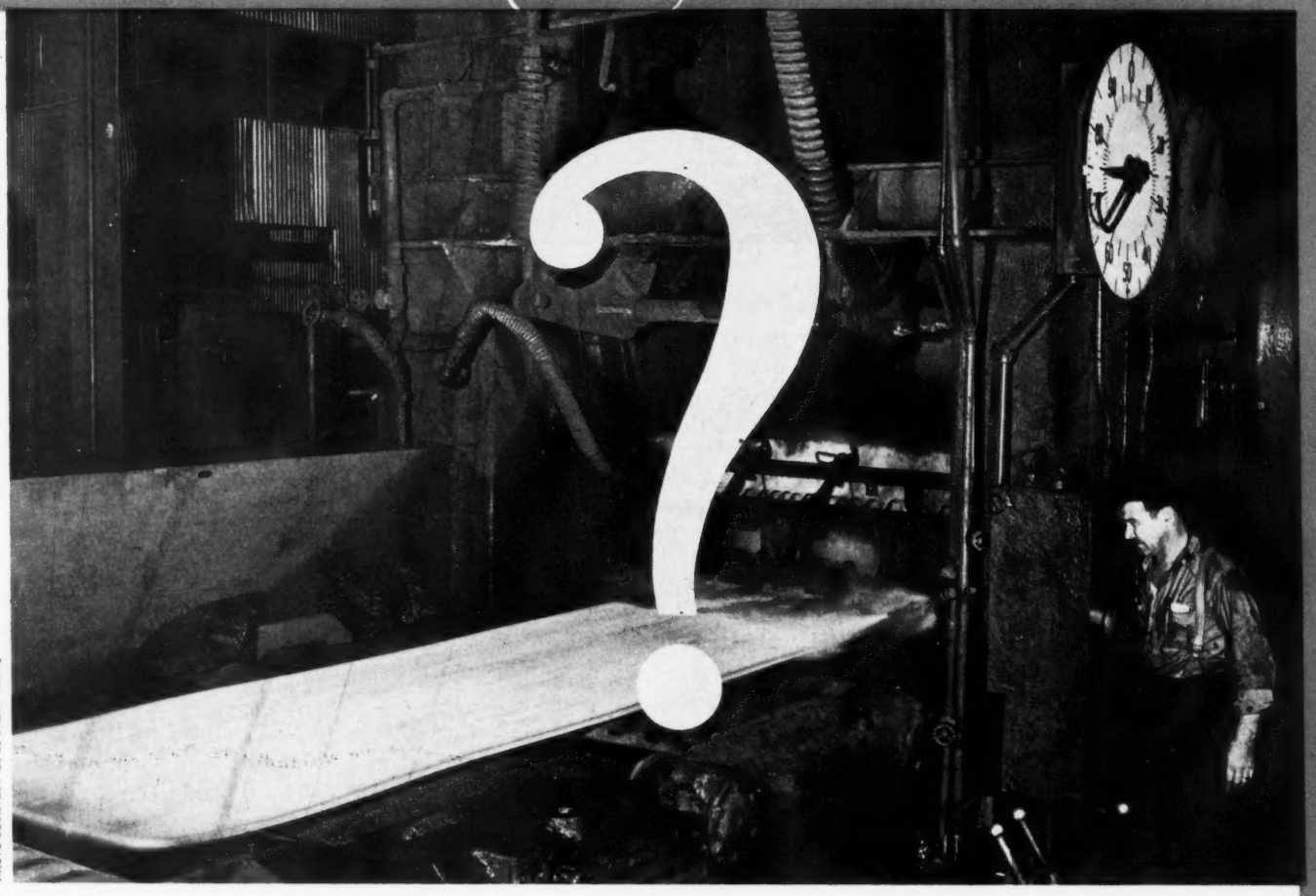


STEEL IS THE KEY to package supply. The Marshall Plan in its first year will require the exporting of 744,000 tons of sheet, strip and tinplate as against 289,000 tons in 1947. At the same time, tin must be conserved to rebuild our national stock-pile. Will a shortage of cans start a new run in 1948 on alternate types of packaging?

OUTLOOK FOR '48

Package users may some day look back on 1947 as the year when they had enough—enough of almost every form of packaging to market, in something like prewar style, the greatest volume of goods America ever produced. To be sure, they didn't get *all* they wanted of some types of packaging supplies as *fast* as they wanted them, but the figures from our annual survey show very clearly that by the end of the year pipelines of supply were generally filled and in many cases excessive and long-term ordering had begun to slack off.

If we could predict that 1948 would follow in normal progression, as one peacetime year normally follows another, we could say pretty definitely that the package-supplying industries are now geared to meet all demands. Even paper, says the Department of Commerce, should balance with demand by spring; paper-industry executives are reported to be watching mounting inventories with some fear of a price break late in the year. But over the horizon of 1948 there looms one great question mark, difficult if not impossible to assess properly at this moment.

That question mark is international. It is the question not only of the extent to which our deter-

EUROPE is making a strong comeback in packaging, as it must to complete its industrial recovery. France, where this picture was taken at the recent *Salon de l'Emballage* (Packaging Exposition) in Versailles, has pushed production of some types of glass containers to 600% above prewar. Europe generally is self-sufficient in glass and paper packaging, but does need steel and machinery.

mination to rebuild Western Europe's economy may put new strains upon our own, but the even larger question of whether we as a nation can remain on a peacetime footing or must return to a virtual wartime economy.

The Marshall Plan and the national stock-pile

The Marshall Plan (more properly, the European Recovery Program) is widely misunderstood. As a means of feeding and relief it presents nothing new to packaging. We have been feeding the war-stricken peoples for seven years now and the diversion of containers to this purpose (comparatively slight, since most of the food for relief is grain shipped in bulk) has become almost a fixed charge against our national supply. The fact is that the volume of food exports scheduled for 1948, first year of the Marshall Plan, is less than for any year since 1942 and will become progressively less each year as Europe's own food production picks up.

Reduced to essentials, the Marshall Plan simply superimposes on the continuing relief program additional billions for the rehabilitation of European agriculture and industry, in the hope that they can gradually be made self-sufficient. Thus the new emphasis is wholly on the implements and raw materials of industry—coal for power, steel for buildings and for products, machinery for farm and factory.

These are not packaged goods. The Marshall Plan does not appear to require more packages. But the Marshall Plan and the rising international tension that accompanies it may very well affect the *raw materials* of packaging—at the very moment when, after six years of disruption, they have attained a precarious balance. The key is steel. Steel is the chief requirement of European recovery—and it is the weak point of our own postwar economy. Can exports of steel be greatly increased without cutting seriously into the domestic supply of steel for containers and machinery?

Among the types of steel that Europe needs most are sheet, strip and tinplate. These are the very types on which our own production capacity is short—and the types most needed in packaging. The Harriman Report (Report of the President's Committee on Foreign Aid) estimates Europe's requirements for sheet and strip at 424,000 tons in 1948, as against 164,000 tons furnished the same countries in 1947. It estimates tinplate requirements at 320,000 tons this year as against 125,000 provided in 1947—and, unlike sheet and strip, which may slack off to exports of 198,000 tons in 1949 and 34,000 in 1950, tinplate exports must remain around the 300,000-ton mark for the next four years.

Manufacture of cans in this country in 1947 is estimated to have taken 3,470,000 tons of sheet and strip, which is more than 18% of total production. There is no estimate of the amount of sheet, strip and other steel devoted to packaging machinery.

Any talk of allocations of materials—which may be the only way to meet Europe's requirements—mentions steel first of all.

As this was written, Secretary of Commerce Harriman had ready for issuance an order re-imposing wartime regulations against the use of tinplate for the packaging of beer, coffee and pet foods. The effect of such an order can be imagined. It would send beer and coffee producers immediately back to glass and pet foods in dehydrated form back to paper. At present from 20 to 25% of beer is moving in cans and 60% of packaged coffee is in cans. The rush to glass by these producers would be immediate, because practically all of them have glass-packing lines in existence and the change-over would be comparatively easy—provided they could get the glass.

Such a move has potentialities of setting off a chain reaction—of creating strains that will be felt not only in glass, but in paper and all the other materials that may substitute for metal. This is the way the crisis started early in 1942. Will it repeat itself in 1948?

Significantly, Secretary Harriman's pending order

has no direct connection with the Marshall Plan, but is impelled by the necessity of rebuilding the nation's strategic stock-pile of tin. Resumption of the production of tin in the Far East areas has not been as rapid as expected and in a tense international situation the United States dare not be caught short. This suggests a second influence on packaging supplies in 1948 which, although not due to export requirements, is part and parcel of the international situation. It may affect a great many more of the basic packaging materials.

IN THIS SURVEY

Paper.....p. 76
Cellophane.....p. 76
Metals.....p. 77
Rubber.....p. 78
Adhesives.....p. 78
Inks.....p. 79
Plastics.....p. 79
Folding Boxes.....p. 80
Set-up Boxes.....p. 80
Liquid-Tight Paper Containers.p. 80
Multiwall Bags.....p. 80
Fibre Shipping Boxes.....p. 80
Glass.....p. 80
Closures.....p. 160
Crown Caps.....p. 160
Cork Stoppers.....p. 160
Cans.....p. 162
Collapsible Tubes..p. 164
Steel Drums and Pails.....p. 164
Fibre Drums.....p. 164
Fibre Cans.....p. 164
Textile Bags.....p. 166
Wooden Boxes.....p. 166
Wirebound Boxes..p. 166
Machinery.....p. 168

Packaging machinery, of course, uses all kinds of steel and iron. A good many packagers in the next two years may find themselves accepting delivery of machines, if they can get them at all, without housings. There is no estimate of the amount of packaging machinery itself that Europe needs, but it is included in the over-all sum of $3 billion for production machinery during the life of the Marshall Plan. During 1947 exports of all types of machinery to Western Europe were about $500 million.

Another place that packaging may be hit is in conveyor belts. Out of a total projected 1948 production of 50,000,000 lbs. we will have no apparent surplus for export above domestic needs—yet this is a vital item for European recovery. In 1947 we exported 6,600,000 lbs. In 1948 we will have to do better than that and domestic users will have to do without, for there is no apparent possibility of expanding production on this item.

Finally, it is very apparent that all packagers are going to be hit this year by a freight-car shortage on both incoming and outgoing shipments. Although it may not need packaging, virtually every item to be shipped abroad will need rail transport. Total traffic may be equal to the heaviest wartime loads. The railroads' rolling stock is wearing out rapidly and there is no chance to replenish it—for one of the high priority items in the Marshall Plan is freight cars for Western Europe. No less than 47,000 cars are due to be shipped abroad in 1948—for European industry cannot function without cars to receive materials and ship products.

The brighter side

The above represents the darker side of packaging prospects for 1948. Let's look for a moment at some of the factors that may operate to make things better than they seem.

In his very able report, "National Resources and Foreign Aid," which laid the basis for the Marshall Plan, Secretary of Interior Krug pointed out that the apparent impacts on our economy may be ameliorated, or even in many cases overcome, through flexibility, expansions, substitutions and adaptations. "Our war experience," he said, "provides a persuasive example of our ability to surpass goals which had been thought to be set at maximum levels.... It would be folly to overlook the dynamic potentialities of the American economy, its capacity for growth and change."

But Mr. Krug does not overlook the fact that our superlative wartime accomplishments were achieved under the stress of "generally accepted wartime urgency" and under the discipline of allocation, rationing and price control. Since the return of such controls does not appear immediately likely, the resources that Mr. Krug outlines can be realized only if we subject ourselves to a remarkable degree of self-discipline.

The worst thing that could happen to packaging in 1948 would be the growth of a fearful, hoarding psychology—a disorderly scramble for materials which, if distributed in an orderly manner, may quite possibly

PLENTY OF SHIPPERS for all packaging needs in 1948, is the word from the corrugated and solid-fibre box industry. From 60 billion in 1947, supply will jump to nearly 70 billion boxes this year. PHOTO, LEVER BROS.

be sufficient to take care of everyone without hardship.

The fact is that the Marshall Plan's billions represent only a small portion of our total national product. Producing as never before in peacetime, our economy has turned out goods valued at $225 billion in 1947, as against $204 billion in 1946 and $199 billion in 1945, the biggest wartime year. Even in 1947, without the Marshall Plan, our exports amounted to 6.9% of the national product. This is the highest export proportion in recent years—but in percentage it is well below 1920, when we exported 9.5% of a national product worth $86.2 billion.

As against 1947's exports of $15.5 billion, the Marshall Plan's provision for $5 or $6 billion in 1948 does not bulk so large. We sent nearly $5 billion worth of goods to Western Europe in 1947; the net increase, therefore, appears to be not more than $1 billion—and in actuality it may be less, because to supply the particular industrial materials that Europe now needs we will have to cut down on shipments to other areas—particularly the Western Hemisphere, which in 1947 took $7.2 billion of our country's exported products.

So far as packaging is concerned, if we consider steel-sheet and strip capacity as the key to any direct material stringency, a close examination of the figures gives reason for hope if not optimism.

The reports show our sheet- and strip-production capacity is now being expanded so rapidly that by the end of 1948 it will stand 3,000,000 tons higher than at mid-1947, a gain of about 18%. About two-thirds of this additional capacity will be in operation by the middle of 1948, when the Marshall Plan really gets rolling. Furthermore, to meet Europe's immediate needs it should be possible to divert temporarily some shipments that normally would go to our Western hemisphere neighbors, who in 1947 took nearly three times as much of our iron and steel production as Western Europe. The European plan calls for a rapid scaling down of sheet and strip shipments after 1948; one big year would put them on their feet.

In tinplate the limiting factor is in tin rather than steel. Exports in 1947, nevertheless, were 561,000

THE RAW MATERIALS OF PACKAGING

(total production for all uses)

	Prewar	1946	1947	1948 Est.
PAPER & PAPERBOARD (tons)	12,036,421	19,278,000	21,000,000	22,000,000
Unbleached kraft paper (tons)	1,290,900	1,775,000	1,900,000	2,000,000
Waxed paper (tons)	304,000	360,000	360,000	440,000
Paperboard (includes container board, folding boxboard, setup boxboard—tons)	6,000,000	8,500,000	9,250,000	Increase
CELLOPHANE (lbs.)	100,000,000	125,000,000	137,500,000	143,750,000
METALS				
Tin & terne plate (hot dipped & electrolytic—tons)	2,738,581	2,709,561	3,550,000	Probable increase
Aluminum foil (lbs.)	20,000,000	40,000,000	50,000,000	Increase
Lead (tons)	633,000	925,000	1,050,000	1,000,000
Copper & brass (tons)	770,000	1,155,000	1,000,000+	Same
RUBBER (natural & synthetic—long tons)	648,500	1,039,296	1,050,000	900,000
ADHESIVES (lbs.)	190,000,000	317,000,000	335,000,000	Same
INKS (lbs.)	290,000,000	336,482,000	359,000,000	Same
PLASTIC MOLDING MATERIALS (lbs.)	107,750,000	375,000,000	443,000,000	540,000,000
Acetate sheet & film (lbs.)	8,000,000	15,147,000	14,874,000*	20,000,000

*Bureau of Census figures for 1st 9 months projected

tons, of which only a fourth went to Western Europe. If Europe's requirement of 320,000 tons in 1948 is to be met, our customers in other world areas will have to bear much of the burden.

However, even the tin situation is not without its hopeful aspects. It is significant that, after having announced Secretary Harriman's tinplate order in November as being imminent and rather drastic, the Commerce Department by the end of the year was tending to minimize the import of the still-pending order. In a statement on Dec. 10, the department said that it would be "some time" before the order was issued and emphasized that any action taken would be to "limit," but not eliminate the use of tinplate for non-food or non-essential containers. At year-end, conferences were going on with can makers and the packaging industries affected to find "the least disruptive methods" of applying tin conservation.

With tin, again, 1948 appears to be a critical year; there are prospects for considerable improvement in 1949. The report of the Harriman Committee points out that rehabilitation of tin-production facilities in the Far East will be completed by the end of 1948 and production at prewar levels is expected by late 1949. "If this rate is maintained for the years following," says the report, "it is possible that a substantial quantity of tin (as an offset to Marshall Plan shipments) can be diverted to the United States stock-pile without restricting industrial requirements."

Naturally, there are many aspects of so vast a program as the Marshall Plan that cannot be accurately foreseen. The effect of a freight-car shortage, the possible denial of needed packaging machinery, a lack of conveyor belts, new demands for lumber for crating—all these could create crises in packaging. But on the whole it appears that if the pinch on steel and tinplate in 1948 can be weathered in an orderly manner, the packaging field as a whole has a good chance to come through without serious upset.

Where we stand today

Were it not for the imponderables of the world situation, it would appear definite that the package-supplying industries have leveled off on the high plateau of production which has for so long been looked forward to as the postwar "normal."

Our survey shows that by the end of 1947, packaging supplies in virtually every category were in balance with over-all demand. The surprising thing is that in some cases supply now appears to be in *excess* of demand. This is clearly indicated by study of the two accompanying tables, showing supplies of both raw materials used in packaging and the fabricated forms of packages.

The *raw-materials* chart reveals that production levels, already far above prewar, continued to mount through 1947 and in most cases are expected to gain still further this year. Only copper and brass (0.2% of which is used for packaging) dropped behind 1947 figures. For 1948, increased production is predicted in every category except copper and brass, adhesives and inks (which are expected to hold the 1947 level) and lead and rubber (which are due to drop slightly during this year).

On the other hand, the *fabricated-packages* chart shows numerous if slight declines in 1947 from the 1946 figures and even more numerous instances in which 1948 is expected to show a downward curve. Down slightly in 1947 were set-up paper boxes, liquid-tight paper containers, glass containers, plastic closures, cork, textile bags, wood boxes and wirebound boxes. Off sharply were metal closures and collapsible tubes. Steady or up only slightly were folding paper boxes, fibre shipping containers and crown caps. The only three categories to show sizable increases in 1947 were metal cans, steel drums and pails and fibre drums—the very packages which now face the immediate prospect of being curtailed by the government's export and stock-piling programs.

Declines in production in 1948 are figured for set-up paper boxes, liquid-tight paper containers, corks, collapsible tubes and steel drums and pails. Only in fibre shipping containers, crown caps and fibre drums are definite increases predicted. In the glass-container, metal-closure, plastic-closure, metal-can, wood-box and wirebound-box industries the question of whether production in 1948 will go up or down is so uncertain at the present moment that only a question mark can be entered.

The raw-materials chart shows production capacity—or supply. The fabricated-packages chart reflects actual production—or demand. Since the fabrication of packages appears to be slacking off while the supply of raw materials remains at a high level, the only conclusion to be reached is that users of packages now are generally getting what they want and have ceased putting on the ordering pressure that built up the 1946 figures to a somewhat artificial level. Excessive stock-piling and long-term ordering are definitely on the decline. The pipelines of supply are at last filled.

If we could accept these indications at face value, discounting all the potentialities for trouble in our European-aid commitments as outlined above, this would be good news for packagers and package suppliers alike. With package supply established at a very high level—in many instances double or better over prewar—and with orderly marketing once more the rule, we could expect to look for (1) better quality, (2) prompt deliveries and (3) some easing of the upward pressure on prices, when suppliers start looking for customers instead of vice versa.

With price levels generally still moving up unchecked, it is significant that 20% of the manufacturers of packaging materials and equipment who answered our survey predicted lower prices for their products in 1948. The majority—55%—expect prices to hold steady or increase slightly. Only 25% feel certain that prices must go up this year.

Just how 1948 will work out may depend largely upon psychological reaction to possible limitations and

allocations of key materials like steel. Also, the picture is not uniform for all packaging materials; there are many diverse factors at work. Following is a discussion of the situation of each individual material in detail.

PAPER

The changed situation at this year-end is nowhere better illustrated than in paper. It will come as a surprise to most packagers—still having difficulty getting a sufficient supply of all grades of paper materials at the right time—that the Department of Commerce predicts a balance of supply and demand this spring in all grades except newsprint. The government prediction assumes that the relative volume of pulp and paper imports and exports will remain the same, but there is nothing in the Marshall Plan to indicate otherwise. In fact, the recent lowering of tariffs should operate to increase imports. Paper-industry executives are closely watching inventory, production and consumption reports because some fear a break in the paper market late this year in the event that inventories outside of the paper mills increase too rapidly.

The paper industry has not been backward about installing additional production capacity and, as a result, the output of all kinds of paper and paperboard (54.8% of it devoted to packaging) rose in 1947 to an estimated 21,000,000 tons, as against 19,278,000 tons in 1946 and only 12,036,421 tons in 1939. By the end of 1948 the industry will have 24,000,000 tons of productive capacity and 1948 output is conservatively estimated at 22,000,000 tons.

It is true that maximum use of this capacity depends upon an increased supply of pulp. At this moment, however, paper men foresee a sufficient supply of pulp available this year to meet the 1948 paper-production estimate.

Unbleached kraft paper. Production in 1946 was 1,775,000 tons, 37½% over the prewar figure. The 1947 total will probably be 1,900,000 tons, with an excellent prospect of 1948 exceeding 2,000,000 tons. Practically all of this type of paper is absorbed by the packaging field. With costs continuing to rise, prices are expected at least to remain firm.

Waxed paper. It is estimated that in 1947 the total shipments of waxed paper amounted to 360,000 tons, which was 15 to 20% over prewar years. The 1946 figure was about the same, but in 1948 shipments are expected to increase 20 to 25%, depending on the availability of waxes, paper stock, etc. From 75 to 80% of production of this material is used for packaging. Present production facilities can take care of anticipated demands without any plant expansion. Prices in 1947 averaged something like 20% over 1946; the 1948 price scale will depend upon changes in production costs.

Vegetable parchment. During the war and postwar years the vegetable-parchment industry has operated to capacity, which had not been customary previously. Production for 1947 probably tops the record with a prospect for 1948 equaling 1947.

Coated and processed decorative papers. In this division, supply seems to be greater than demand, for 1947 production appears to have dropped back to prewar levels after having shown a 25 to 30% increase in 1946. Figures are available only on a dollar basis; normal prewar production is estimated at $14,000,000 worth annually, 75% of it devoted to packaging. Some makers anticipate a downward price-trend with the growth of competition.

Book paper. Paper used for labels, displays, etc., is included in this classification. The total 1939 production of book paper was 1,534,591 tons. By 1946 this had increased to 1,933,428 tons and 1947 will be 12.9% over 1946. As with most other kinds of paper, pulp supply is still a problem; production facilities appear to be adequate. Manufacturers are still on a voluntary allocation plan and are not taking orders for periods in advance of normal deliveries, which are usually in the neighborhood of 30 days.

Paperboard. This classification includes board for shipping containers, as well as paperboard for folding boxes and set-up boxes. Total production for these types of board in 1946 was 8,500,000 tons. The estimate for 1947 is 9,250,000 tons. The prewar output averaged around 6,000,000 tons. In general, the outlook for raw materials other than pulp has been improving.

For corrugated and solid-fibre shipping containers, the 1946 total production was 4,477,300 tons, which is more than a one-third increase over the 1939 figure. 1947 will probably top 4,900,000 tons and the forecast for 1948 production is 5,200,000 tons. Some further expansion of productive facilities is under way and will be operating in 1948. Prices are not expected to change much, but deliveries are due to improve.

CELLOPHANE

The cellophane shortage has been with us almost as long as the paper shortage, but for a different reason. With cellophane it is a case of steadily increasing application to new fields of packaging, including the pre-packaging of meats and produce. However, production facilities are being steadily increased and the general feeling is that supply will come abreast of demand sometime in 1948.

Although no official figures are available in this industry, indications are that in 1947 output was about 37½ above prewar and 10% above 1946. Additional facilities coming in should boost 1948 production close to 145,000,000 lbs.

The raw-materials picture is considerably improved. A year ago glycerin was acutely short, but it has eased up considerably. Although pulp is still short of needs, the situation is improving.

Deliveries are still on a month-by-month, voluntary-allocation plan and this practice will doubtless continue until supply catches up with demand, after which shipments can again be made within a few days follow-

ing receipt of orders. No price forecast can be ventured. Recently most cellophane prices were adjusted upward, moving contrary to the price history of this material.

METALS

Steel. The imponderable situation of this key raw material, in view of European commitments, has been discussed at the start of this report and its principal use in packaging will be discussed under *Cans* in the section on fabricated packages following. It should be remembered, however, that steel is vital to packaging not only in the form of the familiar food-packer's can, but in machinery, in bulk shipping containers such as drums and pails, in lids and bottoms for many paper and fibre containers, in conveyor lines, in strapping and binding, wire and in many other ways.

It should be noted that the 1947 increase in production in tin (both hot-dipped and electrolytic) and terneplate was one of the biggest, percentagewise, to be found on the table of packaging materials. From 2,709,561 tons in 1946 (which was slightly below the prewar figure) production rose in 1947 to an estimated 3,550,000 tons—a 31% gain. This product of the sheet and strip mills is the material from which cans are fabricated. Even with the assignment this year of a sizable part of sheet and strip capacity to the European recovery task, it does not appear, at worst, that the can industry would retreat to its 1946 level.

Electrolytic coating has shown a marked increase during recent years. In 1946, 33% of the total output of plate was coated by this method, while the 1947 estimate indicates that 42% will be by the electrolytic process. By 1950 the percentage may be up to 66.

Prewar, the can industry used 2,919,689 short tons of steel—enough to make 19 billion cans. In 1946, the figure was 2,110,216 short tons. The figure for 1947, projected, is 2,858,692 short tons—enough for 27 billion cans. Steel used for other containers (some of it other than tin or terneplate) brings the 1947 figure up to 3,470,000 tons for packaging.

Aluminum. The lustrous metal, in the form of foil, was one of the bright spots in the 1947 packaging picture. Production, however, did not quite reach the figure predicted last January, because the new facilities under construction by the industry were not completed and transportation shortages also proved an obstacle. The prewar production of 20,000,000 lbs. of foil (60%

PACKAGING SUPPLIES IN FABRICATED FORM

	Prewar	1946	1947	1948 Est.
Folding paper boxes (tons)	1,094,200	2,205,500	2,200,000	2,200,000
Setup paper boxes	6,790,000,000	9,000,000,000	8,100,000,000	7,695,000,000
Liquid-tight paper containers	200,000,000	550,000,000	425,000,000	300,000,000
Fibre shipping boxes—corrugated and solid (sq. ft.)	44,889,409,800	59,875,600,000	60,100,000,000	69,500,000,000
Glass containers	7,411,248,000	16,350,689,000	15,900,000,000*	?
Metal closures	5,677,000,000	13,500,000,000	9,962,000,000	?
Plastic closures (non-food only)	675,000,000	2,500,000,000	2,257,816,000*	?
Crown caps	20,725,000,000	42,875,110,900	42,800,000,000	increase
Cork for stoppers (tons)	3,600	5,400	4,140	3,600
Metal cans	19,000,000,000	23,410,000,000	27,000,000,000	?
Collapsible tubes	540,000,000	961,200,000	650,000,000	decrease
Steel drums and pails	(no figs.)	86,532,000	98,700,000	95,000,000
Fibre drums	2,142,000	15,000,000	17,500,000	19,000,000
Textile used in bags (yds.)	1,531,000	1,700,000	1,500,000	1,500,000
Wood used in boxes (bd. ft.)	3,381,000,000	5,600,000,000	5,000,000,000	?
Wirebound boxes	100,800,000	123,000,000	120,000,000	?

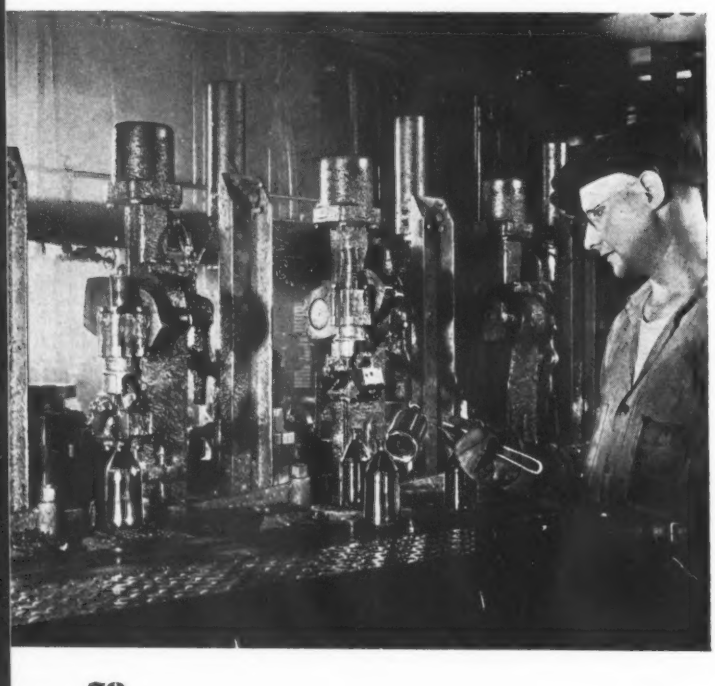
*First 9 months projected

of which went to packaging) was doubled in 1946; 1947 showed a further increase to around 50,000,000 lbs., only 2,000,000 short of the forecast. Predictions are confidently made that 1948 will run well above 1947. A favorable supply-demand balance appears assured. Packaging has absorbed an increasing percentage of the foil output, probably reaching 75% now. New discoveries of bauxite in the United States and South America are considered to preclude the possibility of any aluminum raw-material shortage. Prices are expected to hold firm.

Lead. Lead continues high on the list of hard-to-get materials. However, only a small percentage (an estimated 2% of total production) is used in the packaging field. The average prewar consumption in the United States was approximately 630,000 tons and this figure included both domestic production and imports. In 1946 the figure was 925,000 tons, while 1947 topped a million tons and it is expected that 1948 consumption will be about the same. Exploration work is under way by lead-mining companies to locate new original sources—the only avenue for expansion. Producers sell lead for four months' shipment. Prices are expected to remain steady, although world needs for the material and the foreign-aid plan may exert an upward pressure.

Brass and copper. These metals, like lead, are used but little in the packaging field—probably less than 0.2% of the total production. However, in some fields, notably cosmetics, the easing up of the brass and copper situation was hailed with delight. Total production of brass and copper products for the average of the prewar years was in the neighborhood of 770,000 short tons. For 1946 the figure was 1,155,000 short tons and the 1947 figure will still be somewhat over a million tons. Brass-mill production, so the experts say, follows closely the general business curve. Therefore, present indications are for about the same production in 1948 as was reported for 1946 and 1947. Barring unexpectedly high demands from the foreign-aid program, there should be sufficient metal and production facilities to meet all needs.

GLASS MAKERS say that they have 15% excess production capacity to help compensate for any shortages of cans that may develop. Output of one-trip beer bottles rose 2,000% in 1947. PHOTO, OWENS-ILLINOIS GLASS CO.



RUBBER

Synthetic rubber has made a permanent place for itself in the American economy. Due to the compulsion of the war, production was given a tremendous impetus, so that for many uses where pure synthetic will serve, this country in the future will be independent of world sources. Nevertheless, a large percentage of natural rubber is vital to many products, such as tires for military vehicles and airplanes, and with natural rubber sources in the Far East still not fully restored, continued close government supervision of stock-pile is certain.

Rubber is important to packaging in the form of flowed-in gaskets for bottle, jar and metal-can closures and in machines and conveyor belts. Most of these needs can be supplied by synthetics.

However, for one of the most important packaging items—Pliofilm and latex films—only natural rubber will do. Pliofilm has been steadily increasing in supply and at year-end its manufacturer was freed from all government restrictions covering such use of crude rubber and announced that it was ready to supply all packaging requirements. This would indicate that, so far as packaging is concerned, the supply of rubber is sufficient for the time being.

Rubber-production figures cannot be broken down to show the portion devoted to packaging, but the over-all picture is this: From prewar output of 648,500 long tons (practically all natural rubber), production with the aid of synthetics had risen by 1946 to 1,039,296 long tons, with 1947 running to approximately the same figure.

Industry predicts a decline this year to perhaps 900,000 long tons, but this reflects an expected decrease in demand rather than a shortage of supply.

ADHESIVES

Reliable figures are very hard to get in this industry, but the concensus of leading producers is that production of all types of adhesives (excepting only those devoted to plywood lamination) amounted in 1947 to 335,000,000 lbs. This compares with 317,000,000 lbs. in 1946 and only 190,000,000 lbs. prewar. Demand appears to have leveled off and 1948 figures should be about the same as 1947.

In regard to adhesives, there is no shortage in any category, with the possible exception of animal glues, which depend upon fluctuations of meat-packing operations. While the proportion of animal glues to other adhesives has been declining, it still accounts for nearly

NEW WAYS OF MERCHANDISING place new requirements on packaging. This world's biggest drugstore, at Rexall headquarters in Los Angeles, sells electrical supplies, sporting goods, radios, toys, cameras, books, stationery and notions.

half of all adhesives production. Prices are expected to remain steady in 1948, although some sources foresee a possible drop of as much as 10% on some grades.

INKS

No breakdown is available that shows how much of the total production of ink is absorbed by packaging uses. Prewar, the ink shipments amounted to 290,000,000 lbs., but by 1946 the figures had reached 336,482,000 lbs. Last year showed a further increase of 7% and prospects are that 1948 will see about the same production as 1947, with supply amply meeting demand.

Some special colors are hard to obtain, but the difficulties are not insurmountable, because the raw materials permit easy replacement. Production facilities are ample, though some equipment is being replaced. Deliveries are normal despite a shortage of tank cars. Price trend for 1948 may be upward due to increased costs of labor, materials and delivery.

PLASTICS

In the amazing growth of raw-material supply in this industry, packaging needs are being and probably will continue to be well taken care of. Packagers use molded closures and containers, and they use plastics in the form of sheet (for fabricated containers and displays) and film (for wrapping and box windows). The chart shows that the supply of plastic molding materials reached 443,000,000 lbs. in 1947, as against 375,000,000 lbs. in the previous year and only 107,750,000 lbs. prewar. The forecast is for a further increase to as high as 540,000,000 lbs. in 1948. This by no means includes all the plastic raw materials manufactured, but it covers all types of interest to the packaging field.

Unofficial estimates of the production of cellulose acetate sheet and film (the principal plastic sheet and film used in packaging) are available for the first time this year. They show a slight drop from 15,147,000 lbs. in 1946 to 14,874,000 lbs. in 1947 due to diversion of materials to other uses, but a big increase to around 20,000,000 lbs. is forecast for this year.

New figures compiled by plastics sources also indicate for the first time the approximate percentage of various plastics materials used in packaging. This brings out the interesting fact that the newest of all materials—polyethylene—has become the most important, percentagewise, to packaging. Of an estimated 25,000,000 lbs. of polyethylene produced in 1947 (against 11,000,000 lbs. in 1946), about 40% went to packaging, much of it in the form of transparent film. This indicates that this strong film, excellent for both fresh and frozen foods, may some day rival acetate in the packaging field.

Packaging also consumes 10% each of all cellulose acetate mixed esters and phenolic molding materials; from 5 to 10% of all vinyl and 5% each of polystyrene and urea.

The plastics industry reports that its own raw-

BETTER QUALITY is to be looked for in 1948. This American Can worker gives needle-penetration test to check the quality of waxes.

material situation is constantly improving, although there is still some shortage of ingredients for urea and phenolic compounds. With the rapid growth of volume, gradually lower price trends are looked for, provided there is no radical change in cost of production.

FOLDING PAPER BOXES

The total production in tonnage for 1946 was 2,205,500 tons, which was double the output in 1936, a fairly typical prewar year, and 1947 figures will approximate 1946. Not much change is anticipated for 1948. Prospects for a balance of supply and demand for 1948 appear to be good, although a pulp shortage still hampers this industry both as to better grade board and the cheaper types. No large expansion of production facilities appears to be needed. Deliveries still generally require eight weeks as compared with the usual four, although the backlog of orders is expected to reduce in future months. In anticipation of lower backlogs and an easier supply of raw materials, prices are expected to recede somewhat.

Paraffined cartons, a highly specialized form of folding box, are not included in the above figures. Their current production exceeds prewar by 40 to 50% and the industry looks forward to a limited further increase during 1948. Manufacturers are suffering from a shortage of bleached sulphite and sulphate and their costs are advancing, but they are able to meet reasonable delivery requirements.

SET-UP PAPER BOXES

Although 1946 production of approximately nine billion units by this industry showed a 33% increase over prewar, 1947 shows a decline of approximately 10% from 1946. Some look for a further decline of 5% in 1948.

Supply is adequate to meet demand and little trouble, except for some shortage of newsprint, is anticipated in raw materials. Obsolete equipment must be replaced, but the industry needs no general expansion of its production facilities.

LIQUID-TIGHT PAPER CONTAINERS

Industry production is still nearly double that of prewar, although 1947 output shows a sharp drop from 1946 levels. This recession is expected to continue through 1948, but not to drop as far as the prewar level, according to industry sources. From the standpoint of production facilities, a surplus is expected in 1948. Even so, no cost reduction is expected; in fact, increased freight, wages and material costs may cause an uptrend. Deliveries are immediate.

MULTI-WALL SHIPPING SACK

Figures are not available, but this type of bulk package is steadily extending its usefulness for the shipment of building materials, chemicals, drugs, minerals, pigments, foods and agricultural commodities. The 1947 production showed a growth of 10% over that of 1946 and was 41% over the corresponding figure for 1945. All indications point to availability of materials and facilities capable of meeting a further increased demand during 1948.

FIBRE SHIPPING BOXES

Production of corrugated and solid-fibre shipping containers has been climbing steadily for a decade and in 1947 appears to have reached a new peak at an estimated 60,100,000,000 units. Although that figure is only a notch above the 1946 production (59,875,600,000), it is far above the prewar level of less than 45,000,000,000. The industry was held back from a greater growth during 1947 by lack of board-making capacity, but with new capacity coming in during 1948, this year's figure is predicted at an impressive 69,500,000,000 units. That, it is believed, will easily take care of all demands from the first quarter on. Box-making facilities are adequate.

GLASS CONTAINERS

Output of glass containers in 1947 dropped 2.7% behind that all-time peak of 16,350,689,000 units established in 1946, partly because of a shortage of soda ash in the first half of the year and partly because of the return of metal cans in several fields where glass had been serving during the war, particularly beer and coffee. However, 1947 glass consumption at 15,900,000,000 was still more than double the prewar (1940) figure and production was coming strong at the end of the year following the successful introduction of the one-trip beer bottle as a no-deposit competitor of the can. The effect is shown by the fact that no-deposit beer containers (both cans and bottles) handled only 3% of the pack at the start (*Continued on page 160*)

This month's COVER PACKAGE*

No. 13 of a series

THE PROBLEM: To design packages for aspirin tablets that would have merchandising force and display value, yet retain an ethical feeling. It was felt that to succeed in this highly competitive field, a new aspirin tablet must have something to set it apart from the other brands and that the package most certainly must carry conviction of purity and quality of the product. The idea of dropping the common aspirin designation from the trade name entirely was considered and the question was put up to the designer: Could he devise a short and forceful name that would suggest "relief of pain" without the word "aspirin"? Two package sizes were desired—for the pocket and for the medicine chest—and since price must be competitive with established aspirin brands, packaging materials must be low in cost and in such form as to facilitate economical handling and filling.

THE SOLUTION: Coining the trade name, "Eze," was the key to the design, as well as the merchandising plan. By conveying unmistakably the nature of the product, it permitted relegation of "aspirin" to small type in the ingredients line and immediately distinguished this product from other aspirins. The three simple bold letters of the name lent themselves to forceful display on the package. The designer chose to present the strong Gothic letters in white against a cool gray background. To strengthen the ethical appearance, he added a very staid decorative motif in white; then to provide the necessary warmth, he added a touch of cardinal red. For the pocket pack he chose the conventional flat tin with sliding cover, but he suggested packing 16 tablets instead of the usual 12. For a medicine-chest package of 100, he selected a blue glass bottle, which heightens the pure whiteness of the tablets, and overpacked this in a folding box. The squat, non-tipping bottle is labeled on the narrow end to conserve frontage on the medicine chest shelf; the carton, however, carries the main design on the wide dimension for maximum shelf display.

THE DESIGNER: Although he has only recently established his own package-design group in a studio at Southport, Conn., the name of Robert G. Neubauer is associated with such well-known packages as Calox tooth powder, Bexel, Mounds bars, Scripto pencils and the new prize-winning Fuller Brush cartons. With a background of 20 years in commercial art, he designed a major part of the McKesson & Robbins package line during a term of seven years as art director there; he won All-America awards in 1939, 1940 and 1941. He originated packages for General Electric, Revlon and several cosmetic groups. Previous to starting his own studio, he was for two years head of the package-design department for Dohner & Lippincott. A current client is A & P (cereals and baked goods) and one of his recent innovations is illustrated in the article on page 86 of this issue.

ROBERT G. NEUBAUER

* Brand and company names used in the hypothetical design are purely fictitious; the design remains the property of the designer who conceived it for this cover illustration. Any resemblance to any existing package is purely coincidental.

MACY'S

WITHIN VIEW of the store's customers, meats and cheeses are cut, weighed, marked and packaged in this glass-enclosed, air-conditioned room.

THREE DEEP, shelves in this open refrigerated case for cheeses hold vast stocks in small space. Branded packaged cheeses and Macy pre-packs are in view and reach of customers.

SALADS are mixed behind this fixture, made to look like a huge salad bowl, where 18 different kinds of salad are available and are freshly packaged in take-home paper containers in view of customers.

fancy pantry

Model of self-service merchandising lets the public watch pre-packaging of meat and cheese and try self-dispensing shelves for groceries in cans and jars

Macy's new Fancy Pantry—a wonderland of specialty foods spreading over 10,000 sq. ft. on the eighth floor of the famous New York department store—exemplifies the application of every phase of advanced packaging technique to the principles of modern food merchandising.

Here to take care of the thousands of shoppers daily is an almost 100% packaged operation, an almost 100% self-service operation, an almost completely pre-packaged cheese and meat department and an automatic self-dispensing grocery department. Only the bakery products and a few meat and other delicatessen items are unpackaged or handled in bulk.

A glass-enclosed, air-conditioned, dust-filtered room permits customers to watch the pre-packaging of delicatessen meats and cheeses—cut, weighed, marked, wrapped and sealed in cellophane by trained cutters and wrappers. The pre-packaging is done by 14 wrappers and weighers, two slicers, one stock person and a supervisor. The wrappers and weighers are divided into seven teams, two in each team. Heat sealing is done by hot plate or hand iron, depending on the type of merchandise to be sealed. The weighers in the pre-packaging room mark each label before it is inserted in the package for weight and price.

For meat products 300 LSAT cellophane is used, while 300 MST is used for cheese, both cut in four sized sheets planned to accommodate the various packaging requirements of the Macy operations: 10 by 10 in.; 12 by 12 in.; 15 by 15 in. and 20 by 14 in.

Macy's cheese collection for this tremendous gourmet food department numbers more than 100 kinds including two-year-old cheddars, Canadian Oka, French Roquefort, Swiss Romadur, Norwegian varieties and even a colossal cheddar that tips the scale at one ton. There are 55 varieties of smoked meats. Both cheese and meats are cut and pre-packaged in the glass-enclosed room in sizes from 1/4 lb. to 2 lbs. and placed in the refrigerated self-service open cabinets.

The Fancy Pantry, which of course is devoted primarily to an assortment of fancy foods, is divided into three different main sections—delicatessen, grocery and bakery.

The delicatessen section includes all the packaged meats, smoked fish, frozen foods—all of which are displayed in specially planned open refrigerated cases for self service and arranged in areas along the walls and in asymmetrical islands so that shoppers do not block the

LABELS giving the weight and price are shown in this close-up of some of the pre-packed cheeses and meats. Certain packaged cheeses are re-weighed and price-marked for convenience and assurance of buyers.

AUTOMATICALLY self-dispensed down runways by gravity feed, 1,754 items are arranged on this 70-ft. long Food-O-Mat unit. Customer selects one item and another immediately rolls down to take its place, saving time and space in store.

main flow of traffic when they stop to make their selections. The refrigerated units are planned to accommodate certain types of merchandise. The cheese units, for example, are in three-shelf cases to accommodate vast stock in limited space and contain both branded packaged cheeses and the pre-packed cheeses which Macy packages on the spot. One shelf is slightly above eye level, the second one at about eye level and the lowest one below eye level, but easily reached without stooping. The frozen-food unit is deeper than the others and is maintained at temperatures from zero to minus 10 deg. F. The cheese, meat and fish fixtures are kept from 35 to 45 deg. F. above zero.

A feature of the delicatessen section is a fixture that appears to be a giant salad bowl designed to display 18 different kinds of salads. Salads are mixed before the customer and packaged on the spot in paper take-home containers by the salad mixers.

The self-dispensing grocery fixture is the Food-O-Mat,* invented by Lansing P. Shield, president of the Grand Union Co., introduced for the first time in a department store food department. In 70 ft. of wall space, this unit permits the customer a selection of 1,754 different items and holds bottled, canned or packaged foods on a series of inclined tracks about 5 ft. long. As the customer selects an item from the track or runway, another item immediately rolls into place. Merchandise is fed onto the runways from the rear and consequently is kept moving in the ideal order—the first package on the runway is the first package out.

The Food-O-Mat is a time saver for the customer and a space saver for the store. So far, Macy employees express satisfaction with the operation. Customer satisfaction for this device was well proved previous to the Macy installation in test stores of the Grand Union Co.

The grocery department also includes decorated gift baskets containing fruits and delicacies which Macy package themselves.

Instead of the push carts so familiar in supermarkets, Macy shoppers are provided with shopping bags made of canvas, aluminum sprayed, in which they place their packages and take them to the several cash booths in the department to complete their purchases. An expert menu adviser is also in the department at all times to assist the customers in making selections for their menus.

The whole operation is significant in that it points out more forcibly than ever that packaging for such self-service operation must have appetite and eye appeal. This is strikingly indicated by the open self-service cases for frozen and refrigerated foods. The operation is further indication, too, that this type of merchandising is practical because master merchandisers like Macy's do not attempt to plan such installations on guesswork.

* See "Automatic Store," MODERN PACKAGING, Dec., 1946, p. 134.

SMOKED FISH in jars is displayed in a two-shelf open refrigerated case similar in design to the three-shelved one used for cheeses. These appetizing delicacies are arranged in orderly fashion for the utmost eye appeal and ease of selection.

SMOKED MEATS, pre-packed and marked for weight and price are presented in an identical refrigerated display case. Stocks are continually being replenished to maintain adequate supplies of the 55 different varieties of meats at all times.

WIFE SAVERS

Maxson's individual-portion package for pre-cooked frozen foods, re-heated in package, bids for mass-market field

FOIL PACKAGES with individual portion may be heated in pressure cooker, in boiling water or in an oven. Several kinds of foods may be cooked at same time in one utensil. Packs are vinyl-coated 0.002 aluminum foil.

SIX TO CARTON, the shipping unit is convenient for storage in retail refrigerator cabinets and for shopper making her selections.

Sometimes a package not only has to develop new consumer markets, but even change consumer living habits. A good example is the individual-portion package for pre-cooked frozen entrees and vegetables, just introduced throughout the New York Metropolitan area by Maxson Food Systems, Inc.

These new packages are heat-sealed, vinyl-coated foil bags. The individual servings of pre-cooked frozen meats or vegetables they contain can be prepared right in the package by heating in boiling water, in a pressure cooker or in an ordinary household oven. There is no waste, no work to prepare the foods and no dirty pans to wash.

The new individual-portion packages represent the latest addition to Maxson's revolutionary development of complete frozen meals in a disposable-plate package* which proved so successful for serving hot meals aboard navy planes during the war and, since the war, aboard the commercial airliners.

The "meal-on-a-plate" continues to be one of Maxson's leading frozen-food specialties for airline markets and will be further developed for certain specialized outlets such as marine service stations for use on pleasure craft. But the new individual-portion packs are designed to penetrate the consumer field where the disposable plate-meal package, so convenient for airline serving, is a feature not required by the average housewife and only adds packaging costs for the plate, which has to be made to withstand zero temperatures of frozen-food storage and high temperatures of oven heating and requires further protection with foil and outer cellophane wrapping.

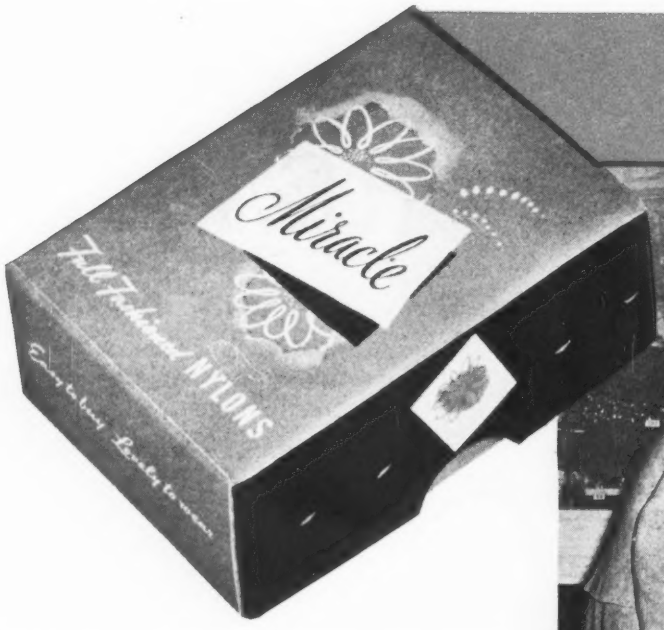
Last spring, when J. D. Small, former head of the Civilian Production Administration, became president of Maxson, it was decided that outlets for the pre-cooked foods could be expanded if the foods could be packaged in a way that would be more economical and convenient.

The objectives of the new project were to provide an inexpensive package that could: (1) bring to the consumer the time and labor-saving advantages of these prepared foods; (2) be heated in a variety of ways—in boiling water, in a pressure cooker, as well as in an oven; (3) be cooked in a hermetically sealed package so that different kinds of foods could be cooked at the same time, in the same pot, without mixing the foods or soiling the utensils.

Foil, because of its ability (*Continued on page 182*)

* See MODERN PACKAGING "Frozen, Cooked and Eaten in the Package," June, 1944, p. 102, and "Frozen Cooked Meals," Nov., 1946, p. 131.

VENDOR



SMALL as a pack of cigarettes, this sturdy telescope folding box holds a pair of nylons. Wrapped with a band of cellophane, it dispenses from a cigarette-type vending machine. Colors are light and dark blue, cerise.

HOSIERY MACHINE draws attention in Whelan drug store in New York's Times Square area. It is aimed principally at emergency purchases in similar busy-traffic spots.

When Lehigh Foundries, Easton, Pa., builders of cigarette-vending machines, proposed to market a $1 package of nylons in automatic vendors, they sensed the problems as well as the opportunities of this type of merchandising as outlined recently in MODERN PACKAGING.* Accordingly, one of their first steps was to engage an experienced package designer.

The idea was to make hosiery available in public places—railroad and bus stations, theaters, drugstores, etc.—to meet that date-night catastrophy—a sudden run at an important moment. Four quarters in the slot, a moment in the ladies' room—and the damage could be repaired. Far-sighted women might purchase an extra pack to carry in the purse. The company saw a considerable market on that basis—not in competition with conventional hosiery-marketing channels.

The package, first of all, had to be low cost. The price of the hosiery, well below the average price at retail counters, couldn't be $1.37 or $1.49, but just $1, and even with the economies of the vending-machine system of buying and merchandising, this left little margin for packaging. Yet the package must convey an impression of beauty and quality, for merchandise that looks shoddy won't sell any faster from a machine than from a counter. The package had to be exceptionally compact, rigid, sturdy and smooth—without projections that might get caught in the mechanism. If it could be made approximately the size of a package of cigarettes it would greatly simplify the problem of adapting the machine.

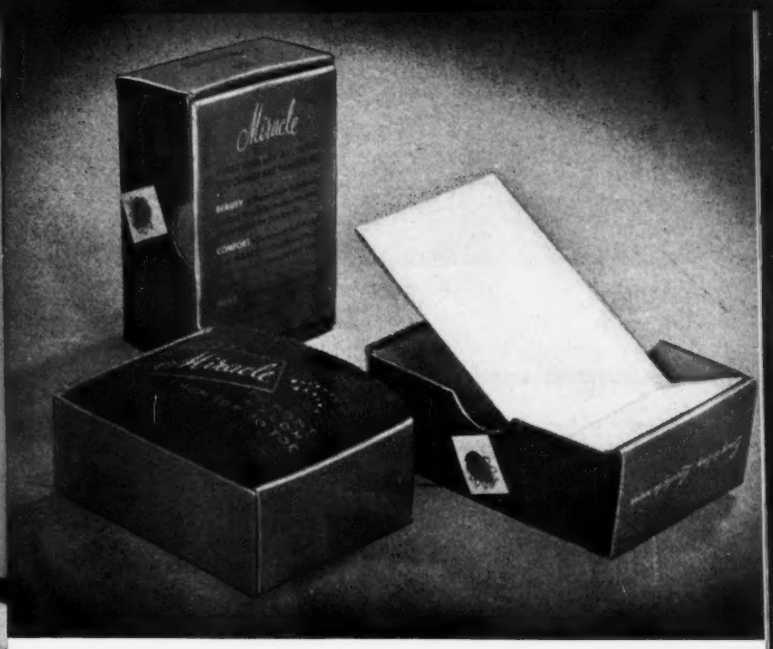
It is a two-piece, full-telescope folding box made with single side walls, friction ends and extended end flaps on both body and cover to form double bottoms. Adequate strength and rigidity is thus provided through the triple-thick end walls and double-thick bottoms on both the box body and cover. Thumb holes are cut in the side panels of the cover to facilitate its removal from the body and give ready access to the pair of nylon hosiery. It can be rapidly set up and filled by hand without gluing, the flaps being self locking. A single band of cellophane compresses the package into a compact, efficient unit, slightly thicker than a package of cigarettes, but the same dimensions otherwise. It presents no sharp corners or irregular parts that might jam the machine.

Surface design is feminine and smart. Covers are printed in three colors plus varnish, while but two colors and varnish are used on the bodies. The top and end panels of the box cover are printed in a soft light blue, with the side panels printed in dark blue. The brand name, "Miracle," appears in dark blue against a white panel on the box cover and a touch of

* See "Automatic Vendors," Aug., 1947, p. 75.

PACKAGE

A $1 pack of nylons, merchandised like cigarettes, demonstrates one solution to the vending-machine packaging problem.



TWO HALVES of box are quickly set up without glue, providing triple ends and double base in a rigid box. Sell copy on bottom of box is repeated on the front of the machine.

FOUR QUARTERS drop in the slot and out comes box of nylons. An actual giant-sized stocking over mirror shows details of hose construction; package is shown in replica.

cerise is introduced in the floral motif surrounding this panel and again in the white spots on the side panels. It is a package that—except for its size—any Fifth Avenue shop would be proud to display.

It was Lehigh's thought originally that the customer would not see the package until it was delivered into her hand from the machine. It was the designer's suggestion that the package might help to promote sales if a sample were displayed prominently on the front of the machine—that its style would enhance the quality look of the hosiery and that its size would immediately suggest convenience of carrying in the purse. Accordingly, a dummy package was mounted on a card which appears under glass just above the delivery chute of the machine along with sell copy for the product. Copy explains that "Miracle" hose are "first-quality, all-nylon stockings . . . famous for beauty . . . comfort . . . wear." The same copy, with elaboration on the three sales points, appears on the bottom of the package. Color and size are imprinted on an end panel.

The color scheme of the package is repeated on the machine itself, for an obvious merchandising tie-in.

The machine gives the customer a choice of two popular shades, fawn and smoke, and carries a range of sizes from $8^1/_2$ to $10^1/_2$ in each shade. This requires 10 separate chutes and delivery handles. Capacity of the machines is approximately 200 units, representing an inventory value of $200. Considerable research was required to determine the two colors that would be most likely to please all women and the range of sizes that would accommodate the great majority.

The machine, over-all, is very similar in size and shape to the familiar cigarette-vending machine. Its outstanding attraction feature is a large recessed mirror panel, fluorescent lighted, covering the upper third of the front surface, across which is draped an actual, giant-size stocking (under a pane of clear glass) to permit critical examination of the stocking's weave and construction. White lettering on the glass tells the customer that these are "Nylons—easy to buy, lovely to wear." Directly above each delivery handle is a cut-out section of the instruction panel showing the actual color of the hose to be delivered from that column and the exact size. This clarity of information is essential to the operation, as it is of course impossible to rectify an error.

The question of "How do you operate a vending machine with a dollar bill?" has been neatly solved by gearing the machine to take four quarters, one at a time, before releasing the package. It is presumed that in the places where the machine will be installed it will always be easy for a customer to get a dollar bill changed to four quarters.

Machines are already in operation in key locations in principal cities throughout the country. A typical location is that of the machine (*Continued on page 182*)

The new VUS weatherproof box

Insurance underwriters and boxmakers develop a peacetime V-box that meets the rigors of today's export shipping conditions. By ALFRED W. HOFFMAN*

Hostilities on foreign battlefields were terminated more than two years ago, but the war on export cargoes goes on with undiminished force. In this conflict the front lines are in foreign ports and inland terminals; the weapons include rain, heat, sleet and pilferage, and the saboteurs are inadequate packages.[1]

The relationship between World War II and current high losses and damages in goods shipped overseas is not just a figure of speech, but is actually one of cause and effect.

The ravages of battle have severely impaired the handling and storage facilities of many of the principal ports, thereby prolonging exposure to adverse climatic conditions; similarly, the breakdown in foreign social and economic structures resulting from the war has led to widespread theft and black-market racketeering.

In view of this intimate connection between events of the 1939–1945 era and those of today, it is not surprising that one of the counter measures is a blood brother of a famous war-born family of packages. Its name is the Vus box.

The designation of this new shipping container is in itself both a clue and a summary. The "V" indicates it is a member of the family of weatherproof boxes conceived during the war to withstand the rigors of unusually severe handling, shipment and storage in battle areas; the "u" denotes the sponsorship of underwriters (marine); the "s" signifies solid fibreboard.

Vus boxes, in short, are specially processed, exceptionally strong, solid fibreboard containers with weatherproof properties which meet marine underwriters' specifications leading to preferential insurance rates on shipments made in such boxes. These properties are best illustrated by citing the specifications:

Dry

Minimum caliper.....0.090 in.
Minimum Mullen test.....400 lbs. per sq. in.

LOADED VUS BOX being removed from water after submersion for 24 hrs. It will show a wet-Mullen test better than that of wartime V3s box. The Vus box is not waterproof.

After 24 hrs.' submersion in water

Minimum Mullen test.....200 lbs. per sq. in.
Maximum separation of plies.....$^1/_4$ in.
Minimum durability.....Loaded boxes, when subjected to diagonal corner-drop tests from a height of 30 in., must withstand at least four drops before one edge is completely ruptured or opened or contents spill

Composition and processing

The composition of Vus boxboard is not fixed and varies with different manufacturers; the only required uniformity is compliance with the specifications cited above. However, certain characteristics have become more or less standardized.

The board is laminated solid fibreboard, usually consisting of three to five plies, with four the most common. Individual plies may consist of chipboard,

* Manager, New York Laboratory, Container Laboratories, Inc. See "Export Pack," MODERN PACKAGING, Dec., 1947, p. 126.

jute or kraft; a combination of two of these three is typical. The range in their weight per 1,000 sq. ft. and their bursting strength (Mullen test) is very broad.

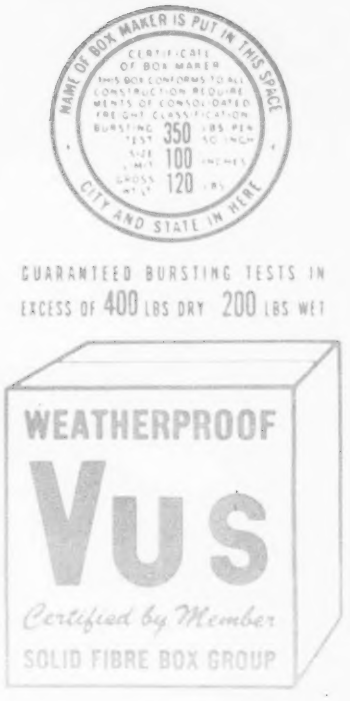
Obviously, a primary consideration in selecting a combination of individual plies is that the sum of the individual calipers and dry-Mullen tests be consistent with the specifications of 0.090 in. and 400 lbs. per sq. in., respectively. The problem of compliance with the wet-Mullen requirement is a more difficult one since normal components, satisfactory with reference to caliper and dry Mullen, would not retain sufficient bursting strength after submersion in water for 24 hrs.

Special processing is obviously necessary to effect a solution. In broad terms, three approaches are possible with respect to the board: (1) addition of as much rosin size as the board will hold, (2) use of a melamine or urea-formaldehyde resin, (3) replacement of the rosin sizing with a specific bituminous emulsion.

The relative advantages and disadvantages of each method are balanced in effecting a selection. Apart from the price of these agents and the cost of application, factors which must be considered in the evaluation include: loss of dry Mullen because of poor formation, foaming in the vats (necessitating use of foam killer), lower machine speeds, difficulties involved in reworking the broke and discoloration of the board.

Measures along the lines discussed above, while prerequisites for achieving satisfactory wet bursting strength, are not sufficient by themselves. Still to be considered is the item of ply separation after submersion in water, not only because the extent is itself limited by specification, but also because of its effect upon wet bursting strength.

Effective lamination of the plies is achieved by employment of special water-resistant adhesives, of which there are two general types. One is a starch with urea-formaldehyde resin; the other, a polyvinyl alcohol. Selection is influenced by such factors as price, cost and ease of preparation, storage and application, and effects upon the system in the event of solidification of the adhesive. In evaluation of adhesive prices, the effect of possible use of a specific bituminous emulsion as an extender must be taken into consideration.

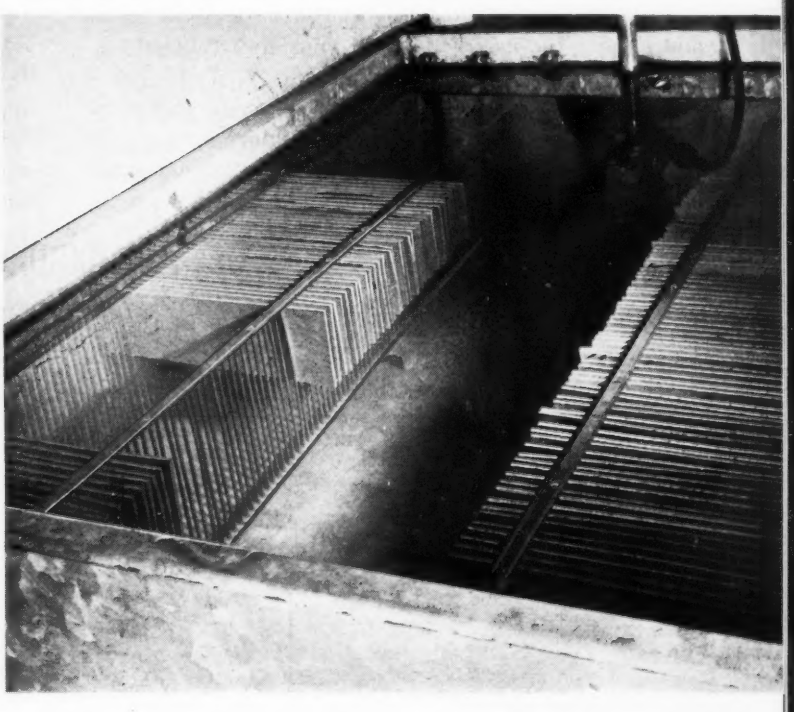

NAME OF BOX MAKER IS PUT IN THIS SPACE
CERTIFICATE OF BOX MAKER
THIS BOX CONFORMS TO ALL CONSTRUCTION REQUIREMENTS OF CONSOLIDATED FREIGHT CLASSIFICATION
BURSTING TEST 350 LBS PER SQ INCH
SIZE 100 INCHES
GROSS 120 LBS
CITY AND STATE IN HERE
GUARANTEED BURSTING TESTS IN EXCESS OF 400 LBS DRY 200 LBS WET
WEATHERPROOF
Vus
Certified by Member
SOLID FIBRE BOX GROUP

The drop-test requirement is kept in mind by the boxmaker from the very beginning. There are two broad measures by which rupture of an edge under stress can be retarded. One is the use of a rich board furnish and the other entails efficient scoring and stitching operations. The first, obviously, has a vital bearing upon selection of the type of component plies which will be laminated.

As has been indicated, development of the Vus box is intimately associated with the history of the

PLY SEPARATION of Vus board after submersion for 24 hrs. must be no more than ¼ in.

SAMPLES of weatherproof boxboard, including Vus, submerged in water at testing laboratory prior to performance test.



DROP TEST that wet Vus box must withstand to meet specifications is a minimum of four diagonal corner drops from height of 30 in.

earlier types of weatherproof solid fibreboard containers.

Disastrous experiences early in the war with shipments in domestic-type fibreboard boxes, even those of super grade, proved conclusively that they were inadequate under the circumstances.

Shortages of materials, facilities and trained personnel for the manufacture of sufficient quantities of other types of containers rendered impossible the complete abandonment of fibreboard containers in favor of these other types. Therefore, the previous concept of fibreboard boxes had to be revised in the light of these conditions. Intensive research, plus unparalleled cooperation among boxmakers, suppliers of all component materials and government agencies produced the weatherproof fibreboard box. Ultimately these included various grades of both corrugated and solid types; only three grades, all solid fibreboard, need be considered at the moment. Their specifications, in comparison with the new Vus, are shown in Table I.

With the passage of time, the V1s type was generally discarded, largely because its stringent pulp requirements caused a dangerous reduction in the over-all production of all types of fibreboard containers and because the V2s grade proved so satisfactory

With the end of hostilities and resumption of more normal commercial relations, exporters of commodities for which fibreboard boxes are suited began shipping in domestic-type containers. The consequences—staggering claims for loss and damage—were inevitable and yet the consignor was not entirely responsible. Discounting those who deliberately adopted a penny-wise, pound-foolish policy and sacrificed good will for temporary, apparent economies, there remained many who were unaware of postwar foreign-port conditions and unacquainted with weatherproof packages. Furthermore, those who earnestly endeavored to procure Vs boxes were until recently stalemated because production was still too limited even to accommodate all of the armed forces and other government agencies.

The American Institute of Marine Underwriters and its various committees, in the quest for a solution, finally enlisted the cooperation of the Solid Fibre Box Group, a voluntary non-profit association of solid fibreboard box manufacturers. Experience with the wartime V-boxes, plus results of exhaustive tests, led the marine-insurance underwriters and the boxmakers to the conclusion that a weatherproof container, somewhere between V2s and V3s in quality, would provide the solution in so far as fibreboard boxes are concerned. And so, after considerable research and development, the Vus box, fabricated to comply with the specifications mutually agreed upon by the agencies mentioned above, has been born.

Performance

Will it do the job? One answer is provided by laboratory tests. In addition to those performed by individual boxmakers to police their own production, the Solid Fibre Box Group has engaged this laboratory to make spot-check tests upon every large run of V-boxes, including Vus containers, to determine compliance with specifications. Results of the latter tests, conducted in accordance with the procedure established in Joint Army-Navy Packaging Specification JAN-P-108, showed that, on 23 different Vus samples selected at random, all boxes complied with every specification and the average results were considerably better than the requirements.

A more convincing indication is the action of marine under- (*Continued on page 180*)

TABLE I—COMPARISON OF Vs BOXBOARD TYPES

	V1s	V2s	Vus	V3s
Dry caliper (minimum)	.100"	.090"	.090"	.090"
Dry Mullen (minimum)	750 lbs./sq.in.	550 lbs./sq.in.	400 lbs./sq.in.	400 lbs./sq.in.
Wet Mullen (minimum)	500 lbs./sq.in.	500 lbs./sq.in.	200 lbs./sq.in.	150 lbs./sq.in.
Ply separation (maximum)	1/4"	1/4"	1/4"	1/4"
30" corner drop test (minimum)	12 drops	8 drops	4 drops	—

SMOOTH MOLDED CONTAINER has tight-fitting lid with embossed Golden State trademark. Tapered for nesting, these pastel-tinted containers may be re-used, when empty, as refrigerator dishes and for other purposes. Lid has a lip at one corner for easy opening.

SEALED AND LABELED with a strip of red-printed glassine locker tape, cottage cheese container carries the necessary brand, product and legal information.

CHEESE DISH

Molded of clear polystyrene, this extra-cost package for cheese made 250,000 new customers for Golden State in two months

A transparent molded plastic container for cottage cheese, designed for multiple re-use, has proved to be a powerful sales stimulant for the Golden State Co., Ltd., Los Angeles.

Used for Golden State brand cottage cheese, one of the firm's major dairy products, the new injection-molded polystyrene package is a covered plastic dish, 4 by 4 in. and $2^1/_2$ in. deep, in pastel hues of blue, pink, green and amber. It holds a full pint of the product.

In its plastic container, Golden State's cheese is being sold both by their retail route men and through markets in all the populated areas of California. Priced a few cents higher than the cheese in its conventional carton, the container is virtually self-liquidating.

Promoted through both newspaper advertising and point-of-sales material, the container is recommended for re-use as a refrigerator dish, a picnic-lunch container, for molded salads and desserts, for holding small "fix-it" hardware, for children's crayons and clays, for packaging home-made cookies and for other household uses.

Features which are stressed include the fact that the dishes are so designed that they can be stacked in the refrigerator and nested when not in use. They are chip-proof and much more durable than glass. The tightly fitted cover makes it ideal for storage purposes. The cover is lipped for ease of handling.

The snug fit of the cover also assures complete protection to the cheese during distribution. On the cover is embossed the Golden State trademark. Further product identification is achieved through a strip of pressure-sensitive, semi-transparent, acetate fibre locker tape, printed in red, which seals the container prior to use.

Extensive tests were run in Golden State's own laboratories to determine that the clear polystryrene material would impart no toxicity or taste in direct contact with the cottage cheese. According to officials of the company, the material received a clean bill on this.

Customer reception to the new packaging is indicated by the fact that in the first two months of use more than a quarter of a million units were sold in Southern California alone. Since the plastic container did not displace the usual Golden State carton, which sold during those months at a normal rate, the firm is convinced that the additional quarter of a million are new customers, won over by the container's appeal.

Golden State, which had experimented with novelty packaging of cheese before the war, believes that one of the most potent factors in the success of their current item is the fact that each household can use many of the containers. They report that a single customer has bought as many as two dozen and, consequently, conclude that the market will not quickly be saturated. However, mindful of the fact that packages of this type for food products usually have a short life, they are holding down their inventories on the container to protect themselves against a premature wind-up.

CREDITS: *Container injection molded by Southern California Plastics Co., Glendale, Calif. Polystyrene material, Dow Chemical Co., Midland, Mich. Locker tape supplied by Minnesota Mining & Mfg. Co., St. Paul, and printed by Topflight Tape Co., Los Angeles.*

MP DESIGN

FOUR-BULB SLEEVE PACK

G-E's new four-lamp carton for 60-watt bulbs is soon to be followed by similar units for 100-watt and 40-watt bulbs. The four-bulb carton, found to be the most desirable sales unit in a five-city market test, is similar in size to a frozen-food carton and contains two snugly fitting sleeves, each of which holds two standard inside frosted, 60-watt lamps.

Advantages claimed for the new package are: greater convenience to consumer in purchasing, carrying and storing light bulbs; space savings from 10 to 25% for shippers, warehousers, wholesalers and dealers; improved features for merchandising displays; new economies in packaging operations and additional time for inspection to assure quality. The new cartons are the result of several years of study involving tests with many types of packages and packaging materials, as well as packages containing from three to six lamps. Dealers welcome the new pack because it eliminates need for further wrapping.

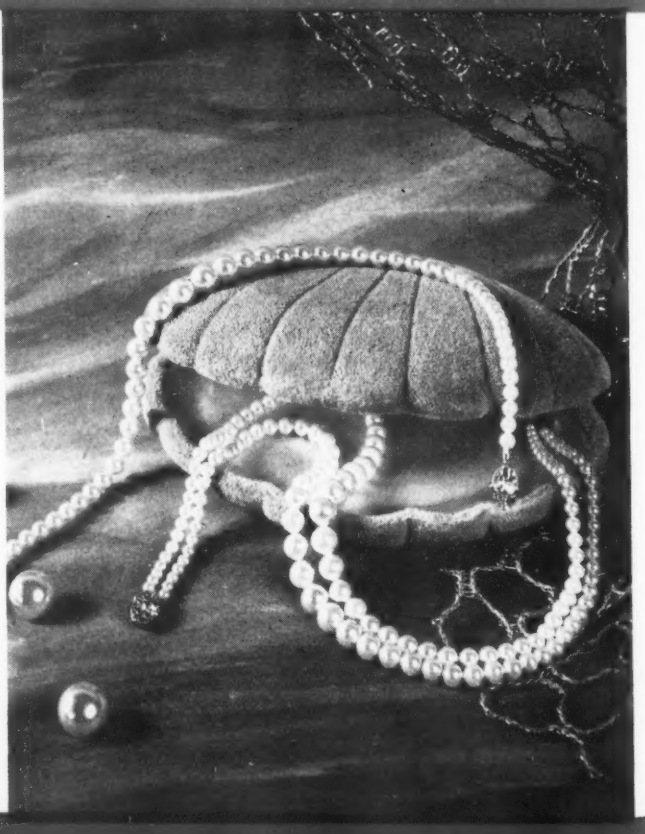
PEARLS IN A SHELL

What could be a more fitting setting for pearls than a glamourous interpretation of the oyster shells from whence they come? Trifari, Krussman and Fishel recently adopted this stylized shell box covered with gray velvet as the background for pearls—a real innovation in jewelry packaging.

The hinged box is made with a scalloped lid and base and is lined with peach satin. It is claimed that this is the first box of this shape to be covered with velvet and has attracted wide acclaim.

The box design has not only consumer appeal in itself, but, as the illustration suggests, offers many possibilities for window and store display in combination with props suggesting the marine origin of pearls, such as real shells, sea flora, fisherman's nets, etc.

CREDIT: *Box, Arrow Mfg. Co., Inc., West New York, N. J.*



HISTORIES

RE-USE PACKAGE IS A BIRD HOUSE

One of the most unusual re-use packages of the year is a wooden bird house containing one can of pheasant, one of mallard duck and one of guinea hen. After cans have been emptied and washed, they may be arranged in the bird house to accommodate three families of wrens. This unique packaging idea was originated for one of the mail-order gift assortments of Fin N' Feather Farm, Dundee, Ill., a private hunting and fishing preserve on which is located the Milk Pail Restaurant. So many people who have enjoyed the game served there asked about sending smoked game to friends that E. H. Eichler, general manager, started packing these treats about five years ago. Today he has 17,000 customers and his own canning plant on the premises. All products are appropriately identified with attractive labels printed with wood-grain design and outdoor feeling.

CREDITS: *Bird house, Standard Wood Products, Dundee, Ill. Cans, Continental Can Co., New York. Labels, designed by Arthur Seller, New York, and printed by Dart Press, New York, in collaboration with Downey & Associates, New York.*

DOLLY'S HIGH CHAIR

Any toy manufacturer can package a baby doll in a folding carton, but it takes real ingenuity to devise a package that becomes an additional re-use toy for the child and thereby adds a new selling feature to the product. Elite Creations, Inc., New York, has adopted a one-piece die-cut carton that can be converted into a high chair for the doll, complete with chair back, seat and tray.

Printing is arranged so that on the chair tray is illustrated a plate and a die-cut flap that becomes the baby doll's glass of milk when bent up into position. Carton is printed in red and blue and is high-gloss varnished.

The dolls are protected from handling and soiling by heat-sealed cellophane bags—a feature which mothers insist upon.

CREDITS: *Design, Saul Feigelman, New York. Carton, Bell Box Co., New York. Cellophane bag, Nu-Bag & Envelope Mfg. Co., New York.*

ALL

1. CASE with 32 bottles of beer or ale is exactly the same weight and bulk as the conventional 24-bottle case. In the cases are four carry-home cartons of eight bottles each. The eight-bottle carton weighs the same as six of old bottles.

The Brewing Corp. of America, makers of the nationally distributed Carling's beer and ale, three years ago became the first big brewery to switch entirely to a packaged product and proved its point by rising to among the 10 biggest producers in the country.

Now, coincident with the opening of an advanced new plant in Cleveland with 12 automatic bottling lines, Brewing Corp. adds another list of "firsts" of great significance to the packaging field. Carling's becomes:

First to go 100% to no-deposit, throwaway containers.

First to offer the consumer the convenience of the throwaway bottle at *no premium* over the net cost of the old returnable bottle.

First to evolve a 32-bottle case having the same weight and bulk as the standard 24-bottle case.

First to pre-package all package-store beer and ale in eight-bottle carry-home cartons.

First to introduce a new conventionalized version of the throwaway bottle especially for tavern and restaurant use.

First to install a streamlined production line that takes bottles directly from the railroad car, fills them and returns them to the car for shipment, eliminating many steps in the traditional bottling operation.

It is, of course, the one-trip bottle that makes all this possible. Brewing Corp. may be said to be the industry's outstanding champion of the one-trip bottle and its president, James A. Bohannon, has made his position clear in a running public argument with Anheuser-Busch which has created something of a sensation in brewing circles. In a king-sized brochure entitled "Carling's Reply to Budweiser's Attack on the Non-Returnable Bottle," distributed throughout the trade, Mr. Bohannon answers arguments that the one-trip bottle is uneconomical by proving that Carling's in this bottle costs the consumer "not one extra penny" and showing that furthermore the consumer gets a clean, new package with each purchase and both consumer and dealer get a lot of extra conveniences.

More aware than most brewers of the fundamental principles of package merchandising, Mr. Bohannon has always been a heavy advertiser. His decision in 1934 to cut out bulk beer—served by the glass with no identification, usually, of brand—was the result of some logical thinking. If a consumer receives a bottle, he will read the label; if he likes the product he will remember it and ask for it by name next time. He will recognize the Carling's label wherever he sees it—in ads, on billboards and car cards. Moreover, Mr. Bohannon felt, the whole trend in beer merchandising is toward greater consumption in the home rather than over the bar.

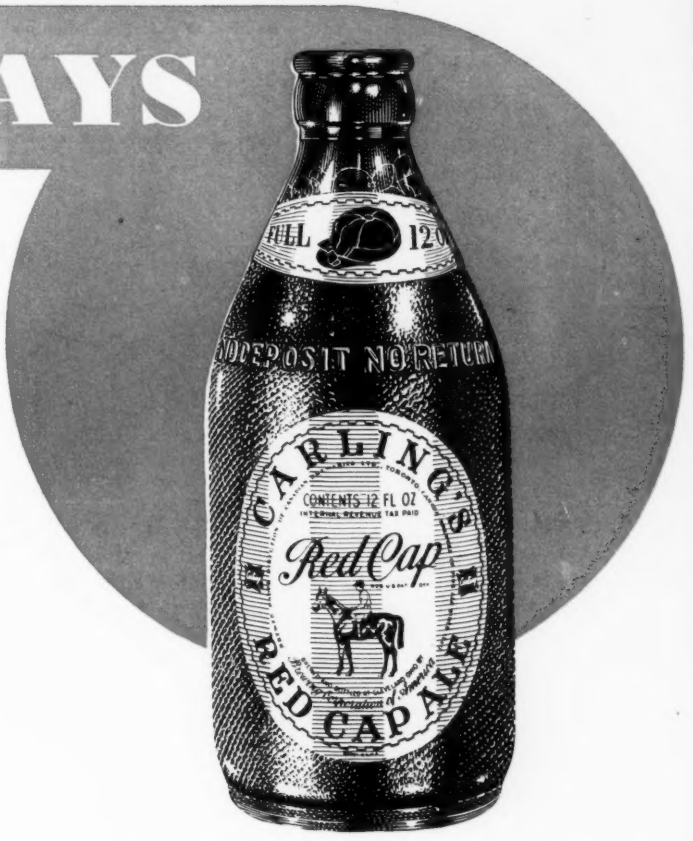
Scores of other breweries have adopted the throwaway bottle to some extent in the last few months, but no other has discarded the returnable bottle entirely and no other—so far as is known—has been able to merchandise disposables without some premium in price. If a consumer formerly bought Carling's Red Cap Ale at his grocery store in a returnable bottle at 15 cents plus 2 cents deposit, he now gets the same 12 oz. of ale in a throwaway bottle at 15 cents and no deposit. With most brewers, the throwaway-bottle package is priced at a penny more than returnables and a penny less than cans.

Carling's, obviously, has brought cost down by the efficiency of its new plant, specifically engineered to handle nothing but one-trip containers—and by its courage in anticipating reduced freight and handling costs.

Where others adopting the one-trip bottle have re-

THROWAWAYS

Carling's sells only packaged brew and sells it only in no-return containers at no extra cost—thanks to a specially engineered continuous bottling operation; a new 32-bottle case, 8-bottle take-home carton and modified one-trip bottle for tavern use boost company's sales volume



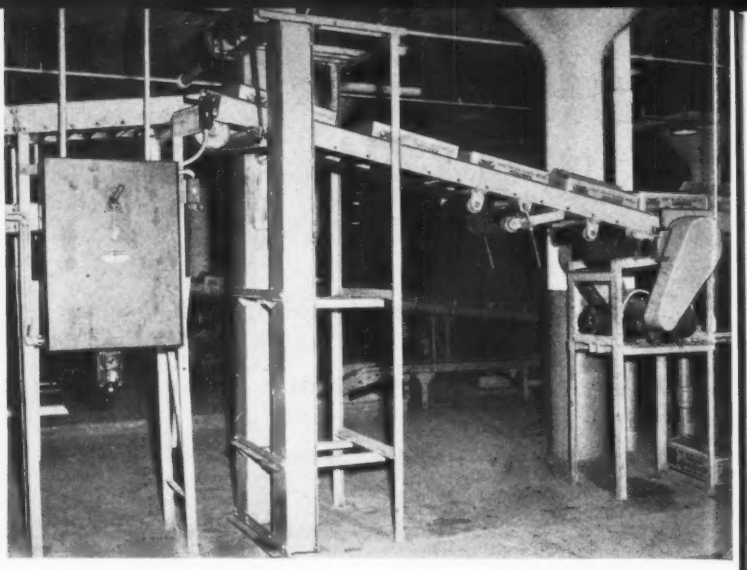
2. LIGHTER KNURLING on surface ◆ and drying of all bottles before they are ready to enter the labeling machine overcome labeling difficulties for the Carling's bottling operation.

tained the conventional 24-case count and reduced the size of their case, Carling's elected to encourage greater per-sale volume and cut packaging costs by simply putting one-third more bottles in each case and each carry-home package. This decision was encouraged by the discovery that a 32-bottle case, although longer and lower, would occupy exactly the same cubage and weigh exactly the same with contents as the conventional 24-bottle case with the heavier returnable bottles. The opportunity to stock one-third more beer in the

3. SHORTER by 1¼ in. than the old export bottle, this new clear-glass bottle for taverns (left) holds same 12 oz. This light-weight bottle, first introduced by Carling's makes possible their operation of plant dispensing entirely with handling of re-use bottles.

4. TAVERN CASE offers big saving for tavern proprietors, since it holds 32 of new light-weight tavern bottles and occupies same storage space as old case of 24 export bottles.

5. ENTERING bottling plant at this point, the empty bottles come direct from railroad cars by these conveyors. Cases usually continue straight through to head of the bottling line where they are to be used.



6. SWITCH POINTS like this are found throughout the maze of conveyor lines. Their automatic controls are used either to raise or lower a hinge section so that two different bottling lines might be fed alternately.

same space is believed to be a strong selling point with both package store and consumer and it has proved particularly effective in persuading the tavern owner to change to the throwaway bottle.

Restaurants and taverns have long opposed the squat "steinie" bottle on the grounds that "it doesn't look good on the table." As long as the one-trip bottle was procurable only in the steinie shape, most breweries have been forced to continue bottling a portion of their product in the tall, returnable, export bottle to satisfy their tavern customers. Tavern owners were not particularly interested in the "no return" feature anyhow, since the burden of picking up empties was on the brewery or distributor and disposing of hundreds of empty bottles each day might otherwise be a nuisance, they thought.

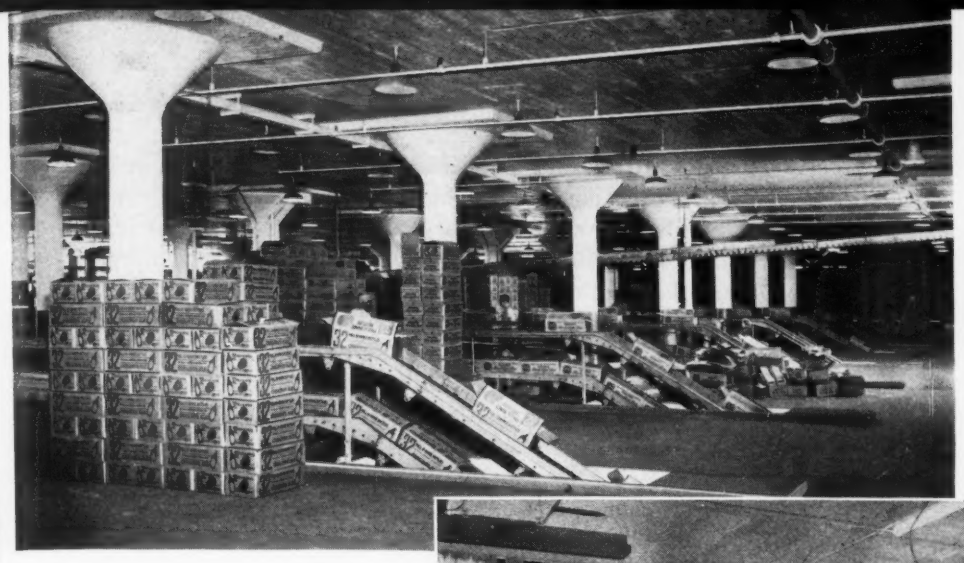
However, the modified export shape in light-weight, disposable glass now being introduced by Carling's as a tavern package appears to have overcome all objections. Against the responsibility for disposing of the empties, the tavern owner has the great advantage of a 25% saving in full-bottle storage space (always at a premium); no breakage losses on empties; no bookkeeping on bottle credits or checking drivers in and out; quicker chilling of the beer because of thinner glass—and, of course, no need for valuable first-floor space to store cases of empties. The disposable bottle can be simply dropped through a hole in the floor behind the bar into a receptacle in the basement, to be removed by the rubbish man.

As may be seen in Fig. 3, the new throwaway tavern bottle is a full $1^1/_4$ in. shorter than the export bottle which it so closely resembles. It is made to hold the same 12 oz. of beer because of thinner walls and a slightly fatter body. With a diameter of $2^1/_2$ in., the new bottle weighs $9^1/_4$ oz. as against 12 oz. for the old. It is handled on the same machinery as the other bottles, after minor adjustments. It does away with the stippled exterior characteristic of the steinie throwaway—another point to which tavern owners objected because it prevented a clear view of the contents. The new tavern bottle is clear glass, although it can be given the customary green or amber tint where desired. Carling's Red Cap Ale bottle is green.

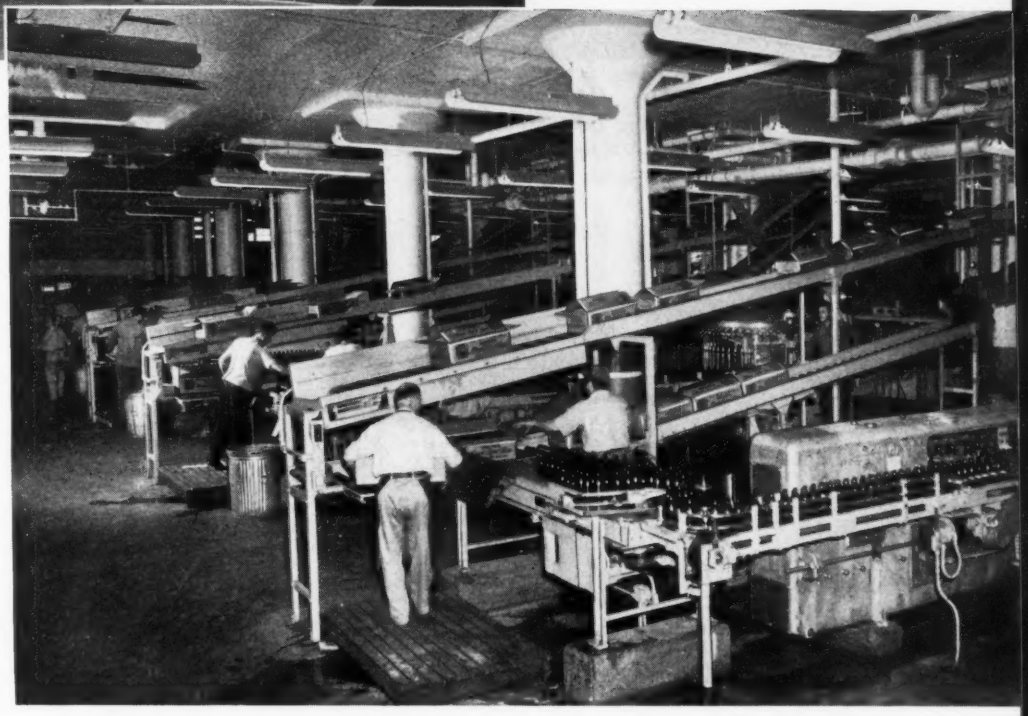
Instead of the sling-and-handle type of carrier for six bottles sometimes used in package stores, Carling's has adopted the policy of pre-packing each case of beer and ale going to stores with eight bottles in a complete, tuck-in-flap carton with corrugated dividers. The dealer can, of course, break the cartons for smaller-quantity sales, but it is hoped that most customers will be attracted by the convenient under-arm package to buy eight bottles at a time—the package weighing exactly the same as the six bottles in a carrier. These cartons are made of 28-point clay-coated board and printed in three colors—the scheme for Carling's ale being red and black against a solid green background. The carton measures 11 in. long by $5^3/_4$ in. wide and is 7 in. high.

The added cost of these cartons is 14 cents per case, which the dealer or distributor is expected to absorb. Carling's points out to them that they save nearly this much by eliminating paper bags and extra handling—and that the incentive to greater volume of sales will more than make up the difference. However, for those who do not agree, the 32-bottle case can be supplied with ordinary dividers and no carry-home cartons. When the dealer opens a case, he finds the four cartons open, with flaps turned down along the sides. Thus without any extra trouble he can remove single bottles just as he would from any ordinary case—or he can remove a carton of eight, fold the flaps in and hand it over to the customer.

While the savings in its specially designed plant absorb part of the added cost of a bottle that makes only one trip instead of the usual seven, Carling's con-



7. SPLIT UP into 12 continuous belts on the second floor, each conveyor operates to feed a bottling line on the floor below. The lower belt is carrying cases of bottles down; the upper belt brings the empty cases back.



8. BOTTLING operation starts at this point. The empty cases are going back to second floor to be inspected and made ready to pick up a load of filled bottles at end of the line.

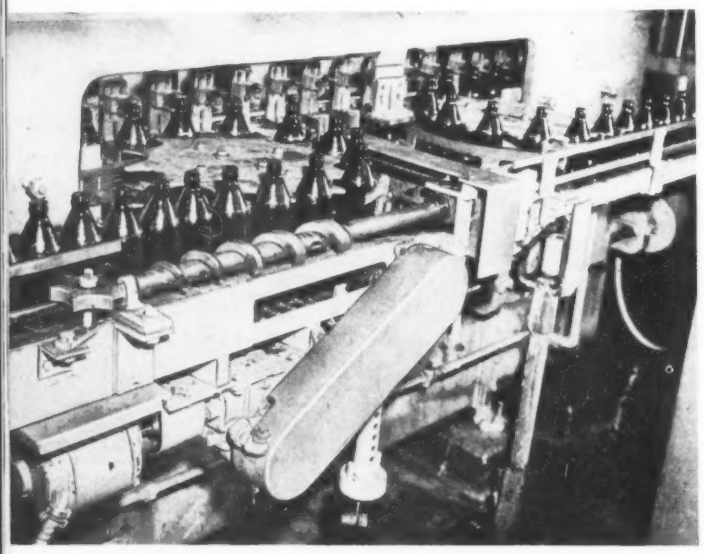
cedes that it is counting on its distributors also to take up some of the cost—in return for certain advantages and savings on their part. The lighter package means lower freight to begin with. Because the distributors don't have to ship back empties, they save again on freight. And, says Carling's, they average a saving of better than eight cents a case just by not having to handle empties. Two research firms hired by Carling's to run cost studies among distributors in 19 widely separated cities arrived at an average of 8.013 cents per case for the handling of empties.

Carling's new longer and flatter 32-bottle cases are designed for forceful merchandising. They are printed in color and the copy stresses the advantages of the new set-up. The fact that there are "32" bottles is emphasized in huge red figures on the side of the case and other copy points out that the case contains "four Handy-Eights" of "full 12-oz. bottles" and that "every one is a clean, fresh, new bottle; never used before—never to be used again . . . . No deposit, no refund, no extra cost."

The grocer or package-store operator, says Carling's, "wants a sales transaction as simple as selling a can of soup" and that's what the new Carling's packaging is designed to give him: No more charges or credits for empties; no more "giving in" to customers about missing bottles; no more scarce storage space for empties; no more sorting of empties; no more breakage losses due to careless handling of empties; no more false reports on empties by delivery crews; no more loss of time checking empties with the beer-truck driver.

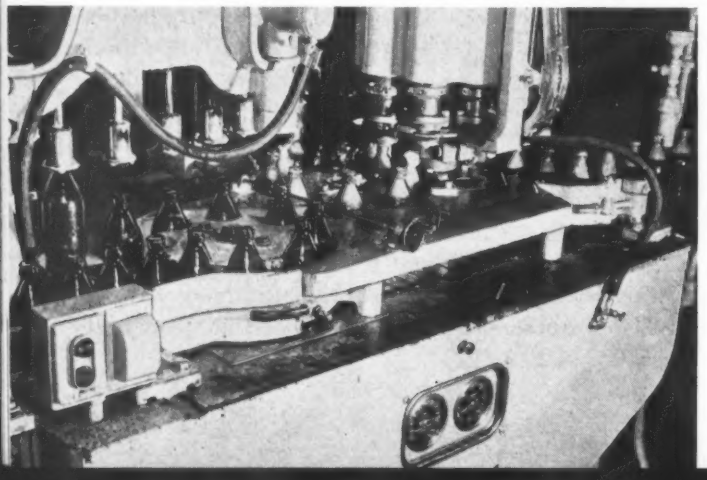
Part of the brewer's advantage in the one-trip bottle, says Mr. Bohannon, comes from the elimination of that ever-present danger of foreign matter—a cigarette butt, a cherry pit, or worse—turning up in a refilled bottle. "Every brewer," he says, "tosses restlessly on his bed nights when he thinks of the damage suits and claims that keep turning up in spite of the most conscientious care and vigilance in handling and inspection. When you take a bottle back and refill it, there's no way of knowing who used it, or under what circumstances, or for what purpose. You can only *hope* that your best

9. UNSCRAMBLER table, where bottles are dumped right side up, having been packed neck down at the glass plant. Where carry-home cartons are included, they remain in empty cases.



10. RINSING of new bottles—the only preparation required before filling—is done in this compact unit, new to the brewing industry. Bottles enter at left and are discharged from the wheel at right directly to the filling lines.

11. FILLER with 50 spouts (left) and 8-head crowner (right) is a synchronized combination unit; average speed is 230 bottles a min.



efforts will deliver it refilled in a manner that's a credit to your label."

In Carling's magnificent new plant, on the other hand, non-returnable bottles are unloaded fresh and clean from the factory. They go through the line almost untouched by human hands. There is no possibility of contamination of a single bottle.

There are 12 brand new bottling lines, each operating as a continuous circuit taking empty bottles from a a freight car, filling them and returning them—sometimes to the same freight car. The complete, automatic conveyor system that does this job is unique in the brewing industry—and could serve as a model of streamlined packaging production in any industry.

The streamlining is made possible, of course, by the complete elimination of re-used bottles, so that only new bottles, fresh from the factory by the carload complete with their cartons and cases, are fed into the plant.

A big cost-cutting feature is the almost complete elimination of dead-storage space. There are, of course, no returned bottles to be stored. By careful scheduling of deliveries, dead storage of new bottles is eliminated. Finally—contrary to the long-standing theory in the brewing industry that conveyors carrying filled merchandise must run through a dead-storage space on the way to the loading dock—Carling's runs its discharge conveyors *direct* to the loading dock and cuts out the profit-eating operation of unloading into storage and later reloading for shipment. The plant has been laid out with a bare minimum of storage space, used only for the stocking of odd, slow-moving items. The method is facilitated, of course, by the fact that Carling's is, more than most brewers, a national operation, the bulk of its product being shipped in carload lots to distributors in other cities.

The conveyor system

There are six railroad tracks feeding into the new Carling plant, with one long dock serving each pair of tracks. On each of the three docks there is a conveyor, two wide and three high. The bottom two belts carry cases of empties to the bottling house; the second and third tiers carry cases of filled bottles back from the machines and into the box cars or trucks. There are 72 car spots in all.

The "empties" conveyor goes up an incline and across a bridge onto the third floor of the bottlehouse. These cases are usually allowed to go right through on one of the three conveyors running through this floor (Fig. 5), or they may be stacked alongside in temporary storage after the line fills up indicating that all machines are supplied with bottles.

Passing to the second floor, each of the three conveyors divides and becomes two and finally four conveyors, for a total of 12 belts, each of which supplies one of the filling lines. The various split-ups are made by means of automatic controls which raise and lower a hinge section when a line calls for bottles, as shown in Fig. 6.

From the second floor the cases arrive at the in-take

end of the bottling line itself on the first floor as shown in Fig. 8. There the bottles are dumped upon the unscrambler and start through the bottling line and the empty case is put back on the upper conveyor to return to the second floor for inspection.

At the end of the bottling line, the empty cases arrive back from the second floor, as shown in Fig. 14, are filled with bottles in the automatic case packer, sent through a case sealer and conveyed back to the second floor. There the 12 conveyor lines merge in a conveyor that is two wide and six sections high (Fig. 17), thus giving each bottling line an individual conveyor for carrying away filled merchandise straight to the shipping dock. The 12 conveyors go across the railroad bridge and four of them turn off down each loading dock, taking the filled cases directly into railroad cars or trucks.

It is possible, according to K. W. Stewart, of Carling's plant staff, for empty bottles to arrive at the plant, go through the conveyor system and bottling lines and leave the plant in the same railroad car—the car having been unloaded in the interim during which the bottles were being filled and returned to the dock for shipment.

It is obvious that this operation depends upon a very high degree of timing and scheduling, both in the arrival of empties and in the shipment of filled packages. Through a speaker system, one man—working with the track line-up and production schedule before him—practically controls the flow of all materials moving inside the bottling department. He has direct communication with all floors of the bottle shop and the loading docks. The system is similar to that used in the control of parts flowing into an automobile assembly line, but it has seldom, if ever, been used in packaging.

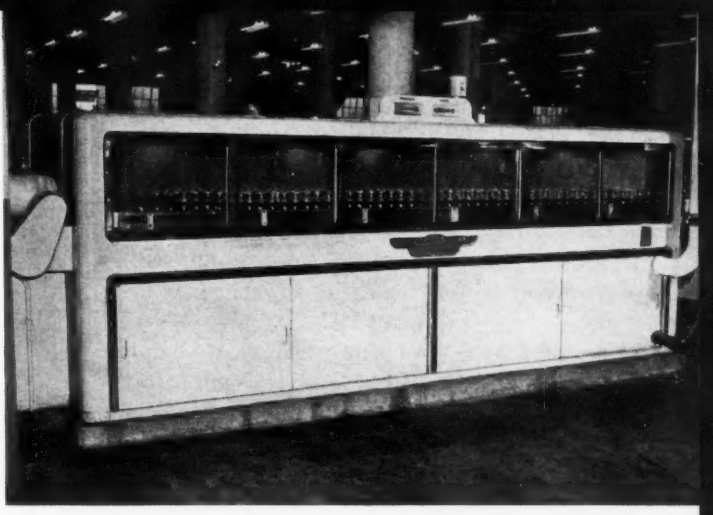
The system combines belt, roller and gravity conveyors, according to need.

The bottling operation

The bottling operation itself starts at the point shown in Fig. 9, where the cases of bottles, packed neck down at the glass plant, are dumped on the unscrambler table. The use of carry-home cartons within the case does not hamper this operation, since the cartons are packed open with flaps turned back along their sides, and the empty cartons stay right in place in the case when the bottles are dumped.

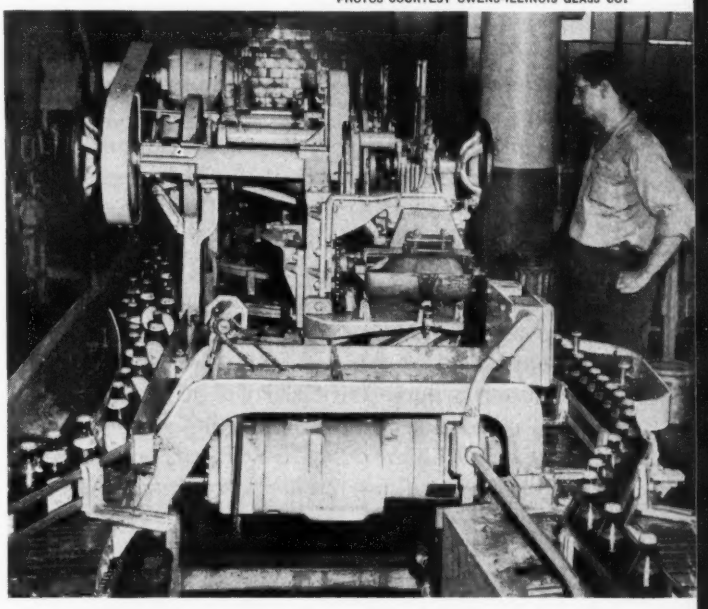
The unscrambler is one that is new to the brewing industry, although it has been used in food canning, particularly baby foods. The bottles move toward a throat where an agitator lines them up and directs them onto a single-file conveyor leading to the rinser.

Since only new bottles are used, a simple rinsing is all that is required to prepare them for filling. There is no washer. The rinsers used by Carling's differ from the customary brewery rinsers in that they are chain driven instead of operating on a drum and the whole unit is simple and compact. Bottles enter the rinser (Fig. 10) through a worm-and-star-wheel arrangement and are deposited in pockets mounted on the chain which carries them around a sprocket and inverts them.



12. PASTEURIZER **is a new, straight-line spray type which maintains speed of the line by conveying bottles through in broad ranks, although it takes them 55 min. to complete the trip.**

PHOTOS COURTESY OWENS-ILLINOIS GLASS CO.



13. TANDEM LABELERS **on each line are high-speed operated, having three heads with total capacity of 240 a min. Fourth head is being added to reduce speed for greater safety.**

They are then carried over another wheel containing spray jets and rinsed. Draining, they pass around a third sprocket which brings them upright and they are discharged to a filler conveyor by a second star wheel. This rinser, also, is new to the brewing industry, having been used previously only on wide-mouth food jars.

Fillers and cappers (Fig. 11) are of the most modern type, with refinements which permit exceptionally high speed. Fillers and crowners are synchronized, permitting direct transfer and eliminating jams in the line. Fillers have 50 spouts and crowners have eight heads, permitting an average output from the combined unit of 230 bottles per min., with a maximum of 250 per min.

From the crowners, filled bottles of ale or beer travel

by automatic conveyor to a new spray-type pasteurizer (Fig. 12), which is of straight-line design rather than the conventional bucket type. Pasteurizing by the hot-water spray is a continuous operation, the trip through the machine requiring 55 min. for each bottle.

Carling's advanced-type tandem labelers (Fig. 13) were originally installed with three heads apiece, with a combined capacity of 240 labels a min. on each of the 12 lines. A fourth head is now being installed, to permit a reduction of the speed of the line going into the labeler and reduce the incidence of breakage without slowing down the total production rate. The added head will also act as insurance, for if any one head goes out of action for any reason there will still be ample capacity to keep the line moving.

Carling's declare emphatically that they have had far less breakage with the throwaway bottle than they experienced with the old returnable. With the latter, the biggest cause of breakage was what is known as "bottle fatigue," a loss of strength through the stresses of repeated usage. While a new one-trip bottle obviously will break more readily than a *new* returnable, it performs better than the usual run of re-used returnables, they say.

As the filled bottles emerge from the pasteurizer in a solid rank, their formation is automatically broken into three (soon to be four) separate rows, each row passing through a labeling head. Emerging from the labelers in their separate files, the bottles again close ranks and march to the casing machines four abreast. There they are returned to the same cases in which they were received empty.

Some brewers have criticized the stippled one-trip bottle as presenting a difficult labeling surface. Carling's experienced some difficulties at first, but corrected the trouble by specifying lighter knurling on the bottle. In order to remove all possibility of trouble, drying equipment is now being developed for installation between the pasteurizer and the labeler on each line, so that labels will be applied to a completely dry surface.

In the casing machine (Fig. 14), 32 bottles are dropped simultaneously (top up, this time) as the operator raises the case into position to receive them. It makes no difference whether the case contains the four open carry-home cartons or just the conventional grid of corrugated separators. When a line is operating at high speed, a second operator makes sure that the case is prepared for filling before it goes into the machine. The only change necessary in the casing machine to handle the new 32-bottle case was the installation of a different grid which will drop eight rows of four bottles instead of six. A feature of the machine is a large acrylic plastic shield which permits the operator full visibility, but protects him in case a bottle bursts.

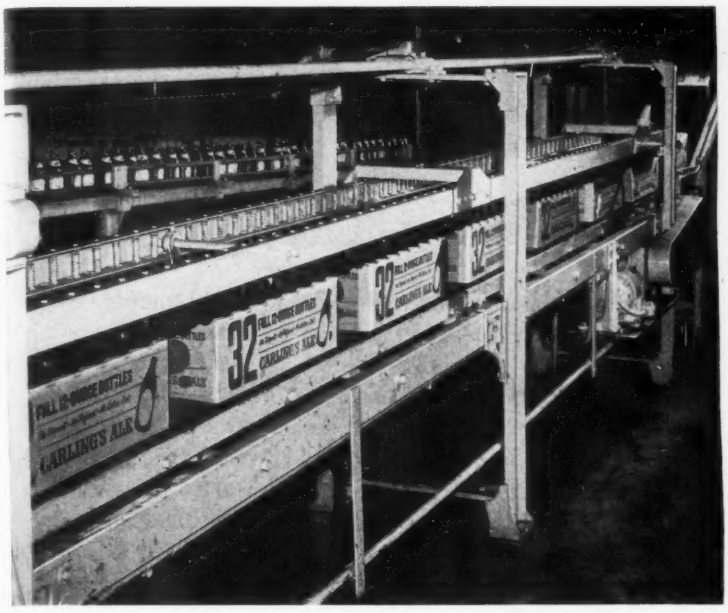
The filled cases pass on automatically to and through a conventional case sealer (Fig. 15), which glues the flaps shut, and a compressor unit (Fig. 16). They continue on the conveyor system, as previously described, to the loading dock and into a freight car or truck.

What has been described above as to the bottling operation is, of course, duplicated 12 times in Carling's 12 lines. With all 12 lines working at average speed, the total plant output would be 2,760 bottles a minute.

At the time this was written, Carling's also was expecting to adopt crown-sealed cans (Fig. 18) for a portion of its output, but with the threatened steel-plate limitation on cans for beer, this may be stopped. Cans would be handled in the same machinery as the bottles, except that the lithographed cans would bypass the labeler and go over a weighing machine to insure that they are completely filled. In addition, the cans would pass over an ink marker which would stamp

14. CASING MACHINE, **where filled and labeled bottles are dropped automatically, 32 at a time, to their original cases. Plastic shield protects operator.**

15. CASE SEALER, **to which filled cases are conveyed directly from the caser at left. Only minor changes were required in this and other machines to handle new case.**



16. COMPRESSION UNIT is unusually long; its spring-loaded rollers insure that all flaps of cartons passing through are firmly sealed before leaving plant.

17. MERGING into single unit, the 12 conveyors carry packaged product back to same freight cars that brought empties to plant a few hours earlier.

alcoholic content on the bottom of each of the cans.

In any case, Carling's 12 versatile, high-speed lines will be readily adaptable to any of the three types of container: the squat, stippled throwaway bottle; the taller, clear-glass, tavern-type throwaway, or the crown-sealed can.

Credits: *Bottles, Owens-Illinois Glass Co., Toledo, and Anchor Hocking Glass Corp., Lancaster, Ohio. Cans, Continental Can Co., Inc., New York. Crowns, Crown Cork & Seal Co., Baltimore, and Bond Crown & Cork Co., Wilmington, Del. Carry-home cartons, American Coating Mills, Elkhart, Ind. Labels, Allegheny Labels, Inc., Cheswick, Pa.; Northwestern Lithographing Co., Milwaukee, and Ohio Valley Lithographing Co., Wheeling, W. Va. Conveyors, Alvey-Ferguson Co., Cincinnati. Unscramblers and rinsers, Hartford-Empire Co., Hartford, Conn. "Cemco" fillers and crowners, Crown Cork & Seal Co. "Vortex" pasteurizer, Barry-Wehmiller Machinery Co., St. Louis. "World Tandem" labelers, Economic Machinery Co., Worcester, Mass. Automatic casing machines and case sealers, Standard-Knapp Corp., Portland, Conn.*

18. COMPLETE new Carling's package family—all throw-aways, "never used before, never to be used again." Cans, which are interchangeable with short bottles in the same carry-home cartons, were scheduled to be added to line about this time, may be withdrawn because of the impending steel shortage.

PLUTO'S NEW

Even the gods of mythology, it appears, cannot escape the onslaught of change in today's package-modernization programs. Pluto, the old red fellow with a pitchfork, who for more than 50 years has identified the fortified and concentrated mineral waters from the Pluto spring at French Lick, Ind., has cast off his mid-Victorian classicism to become a friendly animated cartoon character extolling the virtues of modern laxatives. The new Pluto appears on packages for two new Pluto laxative products—effervescent crys-

NEW PLUTO FIGURE appears on face of new green and red cartons and labels for new products introduced by the company. Continuity of the old trademark is maintained on carton tops and lithographed bottle caps.

DISPLAY CARTONS are used for the first time to promote the new effervescent crystals. The animated cartoon helps to tell sales message of the "new, pleasant-tasting" product. Illustration of mother, father and child indicates it is for the entire family.

LOOK

A world-famed trademark, red devil with pitchfork, becomes a friendly character as bottler of mineral water introduces first new products in fifty years

tals and pills—just introduced by Pluto Corp., bottlers of Pluto Water. These are the first products other than the bottled waters of the famous spring which the company has ever marketed.

The company started its packaging modernization about three years ago when the old, tall Pluto bottles with crown caps were replaced by squatter bottles more convenient for the bathroom shelf space and easier to handle. At the same time, the old red-and-black label with the familiar red Pluto trademark was redesigned in four colors incorporating, behind the trademark figure, a color illustration of the famous French Lick Hotel. The crown closures were also replaced by screw caps lithographed with the Pluto trademark.

When the company decided to introduce its new products, the crystalline and pill forms of these items demanded packages different from the bottled product.

The company felt, according to William R. Rawick, general manager, that the static old trade character would be a more effective sales tool if he were modernized and animated to speak and act in illustrations on the packages and in advertising.

With the cooperation of the company's advertising agency, the character was thus revised. He now appears in his new role on labels and cartons for two sizes of the effervescent crystals, 2 oz. and 10 oz., and for two sizes of the pills, 100's and 30's. However, to maintain continuity with the old trademark, the old character is retained in a circle identifying all the items as "A Pluto Product" on the carton tops and bottle caps.

The predominating background color for all the new packages is green, with red for the name Pluto and for the new trademark figure. Product name and usages are emphasized in black. Large white areas at the lower parts of carton panels add effective contrast.

Another innovation is the use of counter display cartons for the effervescent crystals, the first counter display units the company has ever adopted. The die-cut riser piece makes use of the new Pluto to promote the sales message of a "new, pleasant-tasting," gentle laxative. The face of the carton illustrates pictorially, with a mother, father and child, that the product is "for the entire family."

These new products and packages are another indication of the current trend in modern drug merchandising toward products that speak for themselves on self-service counters. The well-presented informative data on labels, cartons and display containers are also designed to give helpful information to the consumer in use of the product and to aid sales forces in recommending these family remedies.

SQUAT BOTTLE, easy to grip, three years ago replaced old bottle. Famous French Lick Hotel is reproduced in full color on labels.

OLD BOTTLE was famous for half a century as the container for a well-known household remedy. It displayed a two-color (red and black) label.

CREDITS: *Cartons, Universal Folding Box Co., Inc., Hoboken, N. J. Bottles and closures, Owens-Illinois Glass Co., Toledo, Ohio.*

MODERN

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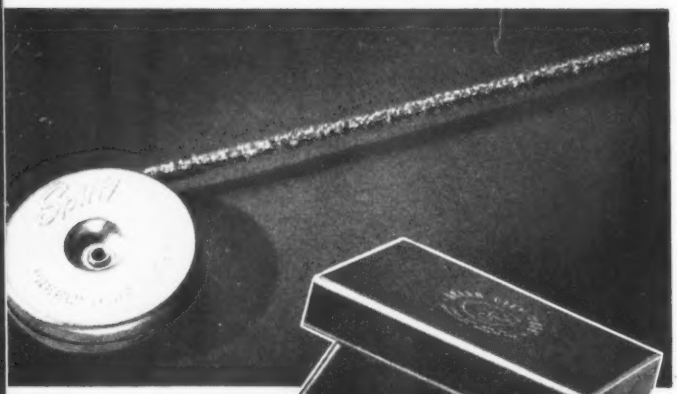

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1 Quick-preparation of Chelsea Milling Co.'s new Jiffy bread mix is conveyed by appetizing illustration and fast-paced copy—"no kneading" and "add water only." Double protection is afforded through a waterproof and greaseproof sealed inner liner and tight wrap. Wrap, National Lithograph Co., Detroit. Carton, Consolidated Paper Co., Monroe, Mich. Liner, Marathon Corp., Menasha, Wis.

2 Cut from a single blank, this folding carton for Pepgo Chemical Products Co.'s "Non-Froster"—a liquid spray to eliminate sticking of ice-cube trays—is intricately die cut, scored and glued to form an inner divider and platform. Bottle, shorter than carton, rests on platform; spray is separated from bottle and fits into a die-cut tab which holds it securely in place during shipment. Carton is printed in red and yellow on white. Carton, Comly, Inc., Philadelphia.

3 A series of 20 standard-length Spiffy "Reel" pipe cleaners made by Crest Specialty Co., Chicago, is packaged in a small circular aluminum dispensing container. They are pulled out one at a time through an opening in the container and broken off when ready for use. Convenient for carrying in the pocket, this replacement for envelope pack keeps product fresh and sanitary.

4 Ocean City Mfg. Co., Philadelphia, has adopted a luxury set-up box for its "2,000" fishing reel. Box if covered with embossed maroon paper and gold-leas stamped with name and trademark. Sea-green box liner repeats trademark in gold printing. The reel itself is enclosed in a chamois bag with drawstring closure. A chipboard sleeve protects box in shipment. Box, Samuel Barnett Co., Philadelphia. Bag, Drueding Bros. Co., Philadelphia. Design, Gilbert Snyder, New York.

5 Hitching Post Foods, Savannah, Ga., has adopted a private-mold bottle, easy to grip in the hand and with a wide lip for pouring, as the container for its Hitching Post Dressing—a salad mix made from an old Southern recipe. For seasonal gift selling three paperboard holly leaves with salad recipes printed on back were tied around the bottle neck with cotton cord. Label, Chittum-Kidd

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PACKAGING PAGEANT

Co., Inc., Baltimore, Md. Gift decoration, J. L. May Co., New York.

6 Delicia ice-cream-cone cups, baked by Northwest Cone Co., Chicago, are marketed in a colorful red, yellow and blue folding carton with distinctive gingham design motif. It holds 18 units in two nested columns separated by a paperboard strip. Carton is automatically cellophane wrapped. Design, Max Karzen, Chicago. Carton, Chicago Carton Co., Chicago.

7 Conti baby oil is appearing in this new bottle designed to fit the hand and with non-skid sides to assure a firm grip. Bottle label conveys an ethical-drug appearance through its clean, uncluttered, simple design. Folding carton for bottle is similar in design to label.

8 Topps Chewing Gum "Party Pak" is a take-home package containing 45 sticks of assorted gum. The round set-up box is covered with a high-finish, colorful wrap. A printed transparent cellulose acetate disk fits inside the beaded edges of the box to form a decorative, tamperproof cover. The container promotes larger-unit sales and provides a functional holder for gum. Disk cover, Milprint, Inc., Milwaukee, using Celanese Corp. Lumarith. Box, Heminway Corp., Waterbury, Conn.

9 New design of packages for glass coffee-making and tea-making devices made by McKee Glass Co., Jeanette, Pa., maintains a family resemblance through color and design. Entire front panel of each carton illustrates the product, clearly differentiating contents of each package. Cartons, Cleveland Cartons Div., Robert Gair Co., Inc., New York.

10 A comparison of the old and new labels for Dutch Club Beer, made by Eberhart & Ober Brewery, shows how carefully planned layout contributes to quality feeling and greater display value. Windmill has been adopted as the new trademark; trade name, in same logotype, is now displayed on one line in reverse white on red panel. Design, Lippincott & Margulies, Inc., New York. Labels, Ohio Lithographing Co., Wheeling, W. Va. Crowns, Bond Crown & Cork Co., Pittsburgh.

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11 Labels die cut to represent the outline of a beautifully manicured finger nail distinguish the packages for "Nail Brilliance," Cutex' new quality line of nail polishes. Printing is in three colors—gold, red and black. Special-mold urea formaldehyde caps give quick counter identity to tops of containers. Labels, Richard M. Krause, Inc., New York. Caps molded of Plaskon, Plaskon Div. of Libbey-Owens-Ford Glass Co., Toledo.

12

12 Unique feature of this visible package for the Universal electric blanket is its specially built-in platform at the front of the box for holding the electric cord and control so that both blanket and control may be displayed simultaneously by the retailer. Box is made of heavy-gauge acetate with ribbed edges.

13

13 Since the introduction of this polystyrene "Purse Pack," a small hinged container for carrying bobby pins in the purse, over 5,000,000 have been sold. Designed for sale in five-and-ten-cent and variety stores, the container, complete with pins fastened to paperboard card, retails for 10 cents. Plastic is transparent, with trade and company name molded on lid. Molder, Hake Mfg. Co. Inc., Depew, N. Y. Material, Lustron, Monsanto Chemical Co., Springfield, Mass.

14 In redesigning the container for Bo-Kay Perfume Co.'s "Daintee Hands" lotion, the problem was to reduce the size of the container because of increased cost of product and develop a label stressing quality rather than quantity. Although the new bottle holds 1 oz. less, bottle shape and modernized label achieve greater eye appeal. Design, E. Leonard Koppel, New York. Bottle, Foster-Forbes Glass Co., New York. Label, Community Printing Co., New York.

15 Vinyl-film pouches in which Betty Lou powder puffs are merchandised carry no printing and thus make the container attractive to the consumer as a re-use carry-all for the purse. Identity is provided by an insert visible through the film. Sturdiness of vinyl enables the pouch to withstand daily handling in re-use. Pouch, A. J. Siris Co., New York. Insert, Sona Printing Co., New York.

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PAGEANT

16 A new family design boldly displaying product and trade name has been adopted by Strykers Soap Co., San Francisco, for all of its packages. The new blue, yellow and white color scheme is used on the folding carton, wrap and metal-end fibre can. Cartons, Fibreboard Products, Inc., San Francisco. Labels, R. J. Kittridge Co., Chicago. Cans, American Can Co., New York.

17 Designed primarily for bold identity appeal are these simple yet striking packages for the new line of automotive products marketed by Amco Chemical Corp. Labels are of yellow flint-coated stock printed in glossy inks. Dark blue lines overlapping large red areas give dimensional effect. Design, Don Short, San Francisco. Labels printed by Stark-Rath, San Francisco, on "Flintglaze" paper supplied by Zellerbach Paper Co., San Francisco.

18 John O. Widmer & Sons, Theresa, Wis., have adopted an attention-getting gold foil wrap, oil printed in royal blue, maroon and white, for its Port du Salute cheese. Made of 0.00045 aluminum foil wax mounted to 16-lb. sulphite, the wrap has a lacquer coating on both sides of the foil for protecting product against acids and salts. Wrap, Milprint, Inc., Milwaukee.

19 The entire line of bakery products made by the Midwestern Div., Interstate Bakeries Corp., now appears in packages redesigned in a blue and white gingham pattern. Illustrated is the Butternut bread wrapper. Logotype for trade name was selected with a view to suitability for use in advertising. Wrapper, Waxide Paper Co., St. Louis. Design, Tinsley T. Jepson, Los Angeles.

20 Bright aluminum foil labels printed in blue, white and dull silver have replaced the old paper labels formerly used for R. T. French Co.'s Silvo silver polish. Blue cap matches blue of the label. With all necessary copy relegated to the back, the uncluttered label face achieves simplicity and smartness. Design, Thomas D'Addario, New York. Label, Reynolds Metals Co., Richmond, Va. Bottle and closure, Hazel-Atlas Glass Co., Wheeling, W. Va.

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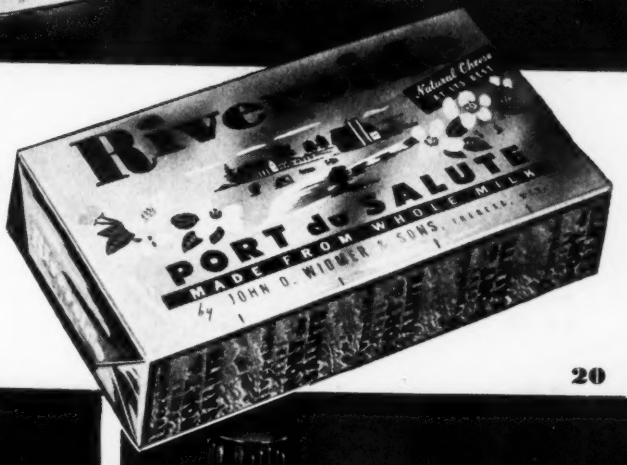

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PHOTO CHEMICALS

FR Corp.'s bright new package colors break tradition in the camera shop

FR INITIAL TRADEMARK gives immediate recognition to all packages in this new family. A program of three color groups—green, red, blue—used separately on all the packages, with black on white, gives new color variety for display.

Photographers, both professional and amateur, buy photographic chemicals for efficiency of the product. They switch brands only when they are dissatisfied. New users are influenced in their selection of such products either by recommendations from dealers or friends, or by what attracts them in photographic stores.

In this pattern of buying psychology, the package has a strong influence. Photo-supply users, considering a change of brand, are naturally attracted to packages with striking color schemes and new users are more likely to select the products whose packages impress them at the point of purchase. In addition, the maker must design the packages with instantly recognizable trademark and distinctive color identity.

The new packages for FR photographic chemicals and accessories are an excellent illustration of the adaptation of these essential selling principles. The FR Corp. started manufacturing photographic chemicals in 1935. Its package designs followed the trend at that time of restrained technical appeal. In its postwar planning, however, this company realized that if its products were to receive desired attention and recognition on dealer counters and shelves, its packages needed a brighter, new look with stronger identity.

They put their problem in the hands of the designer who conceived their package for Scoop, FR's soapless detergent that has won phenomenal success.

COMPLETE KIT designed in one unit is an amateur photographer's dream. Makes an excellent gift item and for holiday selling was equipped with a special Christmas gift band.

The outcome is a whole line of new cartons, labels and boxes in colors that break away from traditions in the photo-supply field, give striking new identity to the FR initials, more emphasis to direction copy and strong attention value for combination displays of cameras and photographic supplies.

The line of 50 or more packages for liquid and powdered chemicals as well as boxes for developing tanks, squeegees, film holders, etc., now appear in three color groups—red, green and blue—with one other impression in black on bright white backgrounds, providing a colorful array in any mass display. The overall identity is maintained by the specialized trademark lettering of the FR initials, which appears on every FR package, label and bottle cap no matter whether background is red, green or blue. In this way there is variety to provide color drama, but no chance of mistaken recognition.

This color variety also assists the dealer in handling the various products. It is of no value, however, to the consumer in the dark room. All tests under every type of safety light proved that all colors—reds, blues, greens—are not easily distinguishable one from the other under such lights. Tests did show, however, that a white letter on a solid-color background reads best under all safety lights and all the packages for darkroom use are planned with this aim in mind.

Another identifying symbol is the silhouette of a little man taking a picture that FR has always used and which, incidentally, is actually a drawing of Lawrence R. Fink, president of the company, once made by a strolling sidewalk artist in Paris as Mr. Fink was about to snap the Eiffel Tower.

FR products are also in private-mold, light-resistant, amber glass which provides square-type bottles marked for measuring and with ridges on the edges to prevent slipping when hands are wet.

An interesting selling idea in the program is FR's "one-shelf dark room"—a collection of photographic supplies for the amateur packaged in a $24\frac{1}{4}$- by-$20\frac{1}{2}$- by-$3\frac{3}{4}$-in. folding set-up telescope box and including everything to equip a dark room. The box cover carries the FR family design and lists contents.

Effectiveness of the new packages was indicated by the response at a recent photo-dealers convention in San Francisco. Here dealers were so enthusiastic about preliminary design sketches of the new packages that the company was swamped with orders just on the basis of sketches alone.

BUSY APPEARANCE typifies old packages, with printed background and small pattern design. This was more difficult to print than the new package. Old packages were designed for professional use and did not have the bold color treatment of the new ones. They were lacking in consumer appeal and ineffective for display.

CREDITS: *Designs, Jim Nash, New York. Cartons, American Coating Mills, Elkhart, Ind. Labels, Allied Printing & Stationery Co., Inc., New York, and Copley Press, Inc., New York. Bottles, Owens-Illinois Glass Co., Toledo, Ohio. Dark-room kit, Hankins Container Co., Union, N. J.*

Do pallets cut shipping costs?

STRAPPING THE LOADS. Eighteen 40- by 48-in., four-way wooden pallets were used for experimental shipment of 50,000 lbs., which left Hillside, N. J., Oct. 7 for the West Coast.

By DAVID M. DALY*

Bristol-Myers traffic manager reports an 80% saving in man hours on palletized shipment water-borne to San Francisco

The successful experience with palletized shipments during the war clearly demonstrated the efficiency of adapting these time-saving methods to civilian industry.

At Bristol-Myers, concerned with cutting shipping costs, we wanted to find out just how much we might save by palletizing our sea-borne shipments to the West Coast.

To explore the possibilities, we invited to the Bristol-Myers plant at Hillside, N. J., on Sept. 8, certain representatives of the Isthmian Steamship Co. and the Lehigh Warehouse Co., our draymen, to plan a pallet-load test project.

Our first experimental shipment arrived on the Coast Oct. 9. The more than 80% savings in man hours represented in each step of the operation, as well as other technical knowledge gained, give us every indication that such pallet movements will be the practical solution to modern shipping problems.

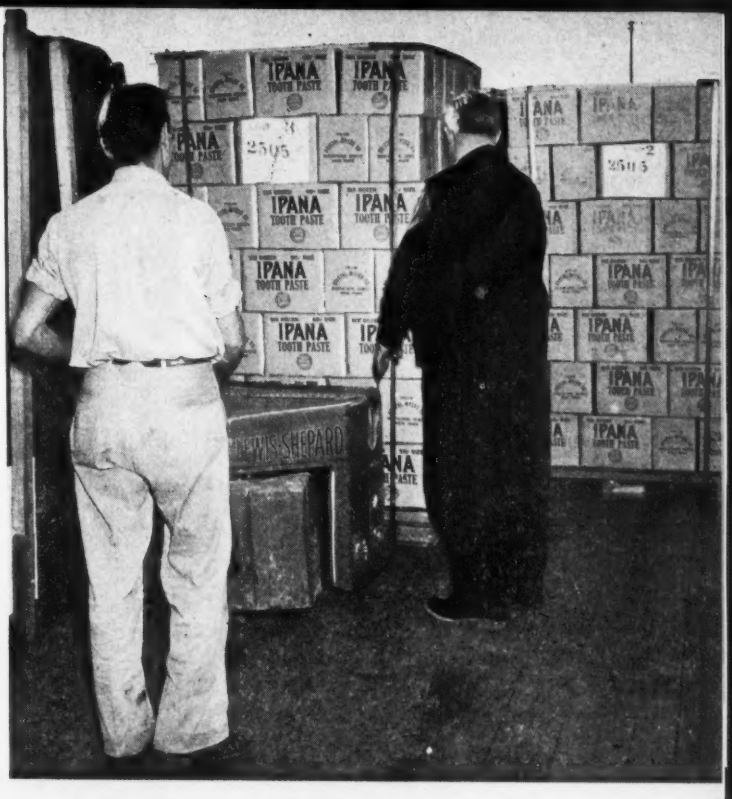
In making our plans for the test experiment, it was decided at our original meeting:

1. That we would move an experimental palletized shipment having a total weight of approximately 50,000 lbs.
2. That we would use for this shipment 18 standard 40-by-48-in. four-way wooden pallets.
3. That the loads would be unitized by use of steel strapping, cushioning all corners, etc. (Signode Steel Strapping Co. agreed to have a man at our Hillside plant to help us with this operation.)
4. That we would use a stake or flat truck, supplied by our draymen, capable of handling 18 pallets on the movement to the pier.
5. That the operations manager of the Isthmian Line would check the longshore labor angle and expedite the handling of the merchandise from trailer to steamship.
6. That our West Coast representative could arrange for a stake or flat truck to facilitate the movement of the pallets from the destination pier to our San Francisco warehouse.
7. That we would forward at the same time, for purposes of comparison, an identical shipment unpalletized.

A shipment prepared to the above-mentioned requirements went forward from Hillside as planned on Oct. 7

* Traffic Manager, Bristol-Myers Co. Hillside, N. J.

UNPALLETIZED LOADS are placed on trailer truck. It took 2 men 2½ hrs. or 300 man minutes to perform this task without the aid of pallets; also tied up drayman's time.



PALLETIZED SHIPMENT is loaded by fork truck onto trailer. This task was performed by 1 man in ½ hr. or 30 man minutes, reflecting a saving of 90% in man-hour handling.

and sailed aboard the *S. S. Ventura* of the Isthmian Steamship Co. on Oct 9.

The unitized pallet loads were handled by fork truck from the drayman's flat-body trailer to wing-type cargo pallets and slung aboard ship. The loaded pallets were stowed 'tween decks. The 'tween-deck stowage was accomplished by the use of a fork truck in the hold. The reverse of this procedure was followed on arrival at San Francisco. There were no charges assessed for loading or unloading of the trailers at the piers.

This water-borne shipment consumed 20 days from our shipping platform in Hillside, N. J. , to our receiving platform in San Francisco. Normal or rail time under present conditions averages 17 days.

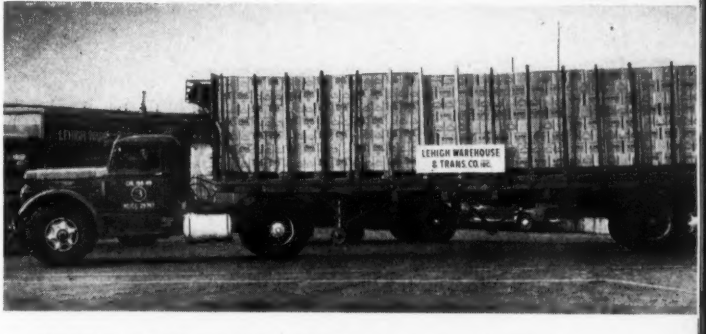
We have yet to obtain the smooth-running operation visualized or desired, but the following résumé of results has already more than justified our expectations.

1. Loading at Hillside

Palletized load—one man $^1/_2$ hr. or 30 man minutes.

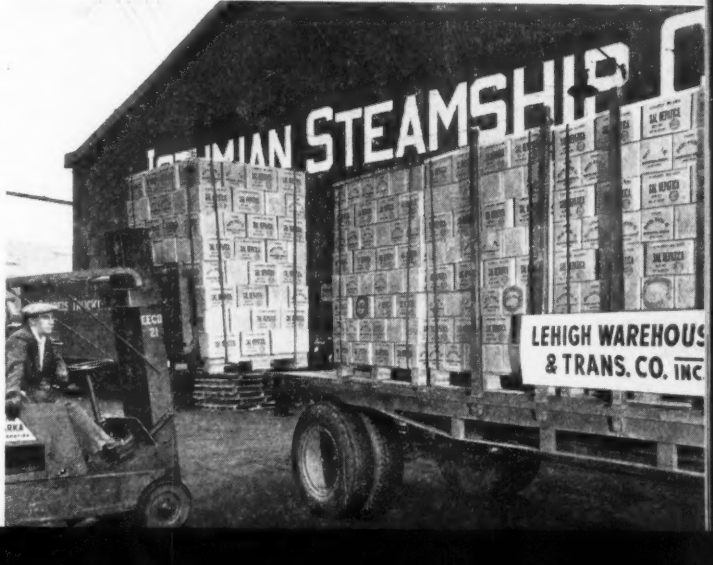
Unpalletized load—two men $2^1/_2$ hrs. or 300 man minutes.

The above reflects a saving of 90% in man hours of handling time. In addition, it reduces the tie-up time on the drayman's trailer from $2^1/_2$ hrs. to $^1/_2$ hr. The time consumed on the unpalletized load is not susceptible of further reduction, whereas we undoubtedly will reduce the time on the palletized load by eliminating loading delays of this particular shipment accom-



FULLY LOADED TRAILER carrying palletized shipment on its way from plant to the pier.

AT PIER first pallet load is taken off trailer by 1 man in ½ hr. or 30 man minutes. Unpalletized load required 2 men working 2½ hrs. or 300 man minutes to do the same job.



INTO VESSEL; 6 men loaded pallets in ½ hr. or equivalent of 180 man minutes.

'TWEEN DECKS; loaded pallets were stowed by fork truck. It took 12 men 1½ hrs. or 1,080 man minutes to load unpalletized shipment.

panied by delays incident to an initial operation.

2. Unloading at pier

Palletized load—one man ½ hr. or 30 man minutes.

Unpalletized load—two men 2½ hrs. or 300 man minutes.

In this operation, a 90% decrease in man hours of handling time is reflected, plus an 80% reduction on turn-around time of the drayman's equipment. The trailer carrying the palletized load was off the pier and on the way to the next pick-up before 8:30 A.M., whereas the equipment used on the unpalletized load, though both unloading operations commenced at 8 A.M., was not free of the pier until 11 A.M.

3. Loading into vessel

Palletized load—6 men ½ hr. or 180 man minutes.

Unpalletized load—12 men 1½ hrs. or 1,080 man minutes.

The reduction in stowage time, shown above, figures out to something over 80%.

In addition to the time saving, the experimental palletized shipment indicated a number of improvements in procedure that can be tested in the future.

Due to cost considerations, the wooden pallet will be discarded in favor of a paper pallet built to Bristol-Myers special needs by the International Paper Co. and unit loaded by means of a gluing applicator using Load Lock No. 4. These paper pallets weight 5½ lbs.; the wooden pallets, 55 lbs. This will mean a large saving in steamship freight charges for products such as ours which are paid on a tonnage rather than a cubic space rate. The arrangement of runners between the deck structure of the wooden pallets also hindered the efficient placement of strapping when the fork loading trucks were used. It is believed that the paper pallet with glued load will eliminate this trouble. Use of the glued load should also minimize the laborious operation of strapping.

Our initial test shipment indicated that for this type of movement, the loading height should be confined to 5 ft. or less, including the pallet and the load weight to something in the neighborhood of 2,000 lbs.

Reports from our Bristol-Myers representative on the Coast and from the Isthmian Line people were that the "out-turn" in San Francisco was very favorable and in every way paralleled the savings reflected in handling and "turn-around" at this end.

There is every indication that unit loading on pallets definitely reduces damage and pilferage, reduces all handling times to an irreducible minimum and that the experimental type of movement attempted is eminently practicable.

Another experimental shipment went forward the middle of December. This second experiment was made with the paper pallets, unit loaded by gluing as mentioned above. The shipment consisted of 100,000 lbs. prepared for four comparisons:

20,000 lbs. without pallets

80,000 lbs. on pallets in this manner:

20,000 lbs. (10 pallet loads) with cartons glued.

20,000 lbs. with cartons glued and two straps.

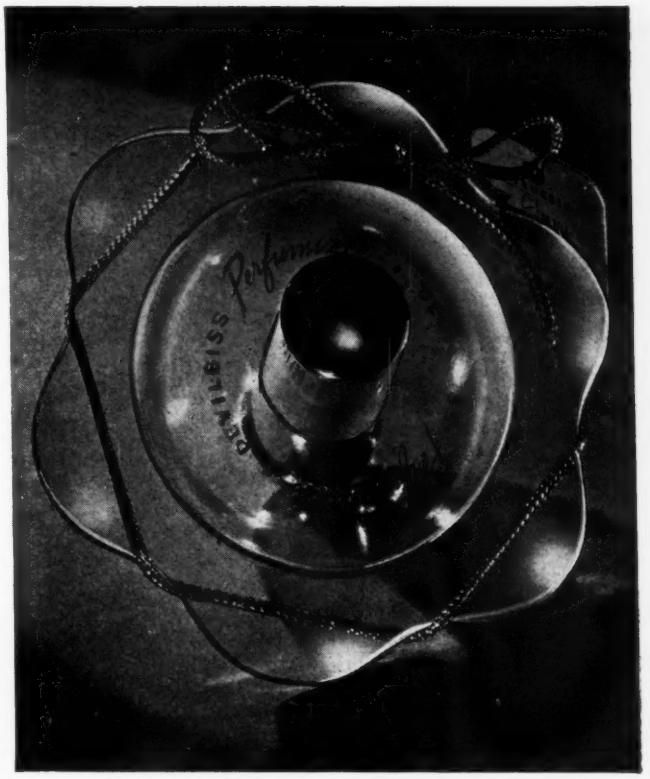
20,000 lbs. with cartons glued and one strap.

20,000 lbs. with cartons having no glue, but four straps.

It is too early at this writing to report results of the second test, but there is no question in the minds of the participants that it can be "squared away" and we intend to stay with it until we are satisfied.

Transparent hemispheres

Brilliant new treatment of rigid drawn acetate provides intriguing setting for DeVilbiss perfume atomizer designed to be carried in the purse



TWO HALVES of 0.020-gauge acetate sheet form sphere in which atomizer, shaped like lipstick, is suspended. Center section of flat acetate sheet is gold-leaf stamped and acts as anchoring device. "Stabilizer" indentation on bottom half prevents package from rolling on display shelves. Gold cord holds halves together.

When the DeVilbiss Co. decided to manufacture a purse atomizer for perfume, one of the first requirements was that the product be intricately and precisely made. The design had to be such that the perfume would not clog up any small orifice and particularly that it would not evaporate or leak. Although this may sound simple, only a manufacturer with long experience in making products that utilize air can do it successfully.

Then came the problem of packaging. Here it was felt that the product itself was sufficiently attractive to warrant a new and unusual type of package. Accordingly, the question of package design was entrusted to the same industrial design organization which had developed the styling of the product itself.

Planning for the package started early in April, 1947, when this organization studied more than 90 different packaging approaches worked out by its package design staff and investigated production possibilities and prices with a selected group of 14 package producers specializing in the plastics packaging field.

Out of this process was evolved the final package for the Perfumizer, which is shown in the accompanying illustration. The product, which is shaped like a lipstick, is suspended in two hemispheres of 0.020-gauge, deep-drawn cellulose-acetate sheet. A center section fashioned from a flat acetate sheet with gold rolled lettering acts as an anchoring device. The lower sphere is equipped with a flat "stabilizer" indentation on its bottom to prevent the package from rolling on display shelves.

The package had immediate acceptance when it was introduced because of its interesting display features. It was not only effective when hung up like a Christmas-tree ornament in store displays, but also as a tree gift in the home after purchase.

The three parts of the container are held together by chain gold cord, wound alternately above and below the six petal-like curves of the center section. Although this arrangement joins the parts firmly, it can easily be removed and replaced without untying the bow knot. The clarity of cellulose acetate and the ease with which it may be formed were important factors in its selection for this application.

CREDITS: *Design of Perfumizer and plastic package, Barnes & Reinecke, Inc., Chicago. Package manufactured by National Transparent Plastics Co., Springfield, Mass. Tag, Dancyger Mfg. Co., Cleveland, Ohio. "Radiance" gold cord by Taffel Bros., New York, from "Lurex" yarn by The Dobeckmun Co., Cleveland, Ohio.*

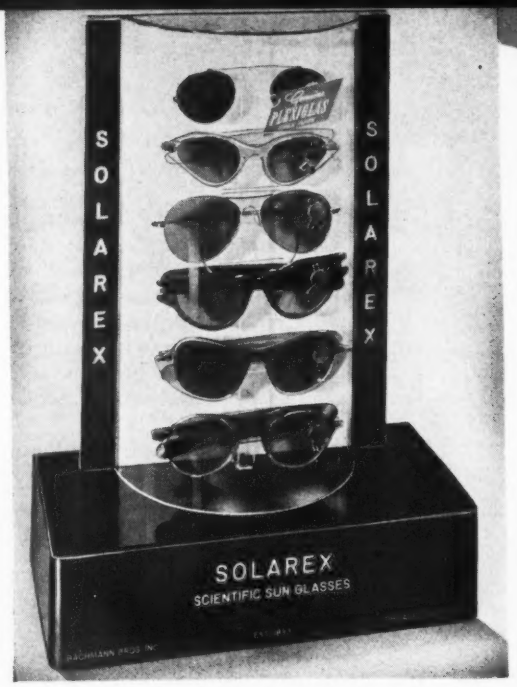
Specially prepared for supermarket merchandising is this hinged-top set-up box for displaying Kleinert plastic shower caps. Art work on inside back panel shows uses for product. Caps are placed over paperboard circle carrying sell copy. Front panel of display box is cut V shaped to reveal shades of caps within.

National Biscuit Co. uses this die-cut, easel paperboard display to announce the return of prewar metal cans for its "Famous" chocolate and ginger wafers for making ice-box cake. Back piece features an appetizing reproduction of the easy-to-make cake. Three cans fit into the display base. Display, Wincraft Printing & Offset Co., New York.

MP Display

Three die-cut openings in this display enable purchaser to help herself to shade of Max Factor eyelash make-up desired. In back are three vertical magazines, each holding a different number of packages for each of three most popular shades in ratio to consumer demand—12 brownish-black, 6 black, 4 brown. As one is taken out, another drops in place. Display, Einson-Freeman Co., Inc., Long Island City, N. Y.

Carton forms an integral part of this display for Rem cough syrup. Pyramid pedestal into which it fits is similar in design and coloring to carton. Price tag, with place for retail marking, slips into carton top. Easy to set up, display occupies 8½ by-6-in. space and raises carton above counter level for greater attention value. Design, Lucian Bernhard, New York. Display, Guilford Folding Box Co., Baltimore, Md.



Bachmann Bros.' display for Solarex sun glasses is one of the first to use the new special lacquer for coloring acrylic sheet. (See Equipment and Materials, p. 138, this issue.) Lettering is cut through sprayed-on blue lacquer, giving it an edge-lighting effect. Display, Anthony D. Calabro, Upper Darby, Pa.

St. Joseph's aspirin for children is being introduced by Plough, Inc., Memphis, Tenn., in this folding paperboard display carton printed in pastel blue and pink. Sell copy on front panel points out "No cutting or breaking of tablets" is required, since they are quarter-strength usually prescribed for children.

Gallery

Original art work for the drum-majorette lithographed paperboard display card (center) promoting Canada Dry's "Spur" cola serves for four distinct point-of-sale pieces. Two elements of display are separated by small space and painted in sufficient detail to allow each section to be used separately. A fourth card was made by using a section of one element, head and shoulders of full-length figure. Multiple use of art work saved considerable expense. Display, U. S. Printing & Lithograph Co., Cincinnati, Ohio.

1. MAGIC FREEZE is actually a dehydrated ice cream containing milk, cream and all other ingredients except water. It is successfully packaged in an amber glass jar with vacuum-tight lid, oxygen being evacuated and replaced with nitrogen.

NITROGEN PACK

How it solves the problem of preservation for a product with high butter-fat content.

By G. C. NORTH*

The ever-increasing number of electric refrigerators in homes is constantly broadening the market for frozen dessert mixes, including ice cream. The popularity of various types of ice-cream mixes is now well established. Most of these require the addition of milk or whipping cream. Such products are in many cases merely a mixture of sugar, stabilizer and flavoring and present no keeping or packaging problems. Other products such as Magic Freeze, recently introduced by Beatrice Foods Co., are complete mixes containing the milk, cream and, in fact, all ingredients except water. The housewife merely replaces the water of the mix that has been removed in the condensing and drying operation, chills the mix, whips it and freezes it in the ice or frozen-food compartment of her mechanical refrigerator.

The packaging of this type of mix is a far more complex problem than was the case with the earlier dry mixes containing no fats. Our solution of this problem, involving a nitrogen pack, may be instructive to manufacturers of similar sensitive and complex products, particularly those having a butter-fat content.

The fact is that the further we go in food technology in perfecting a food product, the more serious are the problems we encounter in both processing and packaging. In a product such as Magic Freeze, only dairy ingredients of the highest quality may be used if good flavor and shelf life are to be maintained. The proper condensing and drying equipment must be available if a delicate, fresh flavor is to be preserved in the final product. Proper processing temperatures and methods must be followed so as to destroy any undesirable enzymes and still not give the product a pronounced cooked flavor. The problem of developing the proper body, texture and desirable whipping properties are all technical considerations.

* Director of Research, Beatrice Foods Co., Chicago.

The package requirements

After the product is manufactured and packaged we have the added problem—perhaps the most serious of all—of preserving the original quality over long periods of time under relatively adverse conditions. The product may at times remain on the grocer's shelf or in the home six, eight or 10 months. The temperature and humidity may vary from cool and dry to very hot and humid. The package must be moistureproof and vaporproof. It must be capable of being filled at high speeds, be impervious to destructive light rays, have good eye appeal and be capable of labeling on high-speed machinery. The cost, of course, must be low enough not to out-price the market.

It has long been known that products containing appreciable quantities of fats, when exposed to oxygen for varying periods of time, tend to break down and develop undesirable oxidized flavors. Fat is known to pass through an "induction period" before the breakdown becomes evident. This varies for different fats, as the graphical pattern shows in Fig. 2. Two approaches to overcoming this undesirable property have been made: (a) Products known as anti-oxidants will

It's a Finer Cola

"It's a Finer Cola"

retard this breakdown. Various compounds exhibiting these properties have received a great amount of attention during the past few years and several of them are known to be of real value in slowing up this undesirable breakdown. (b) The other approach to the problem has been the removal of oxygen from the product during its storage life.

Dairy products containing butter fat are especially susceptible to breakdown. The rate of breakdown is known to vary with the quality of the original milk, its copper and iron content, the method of processing, the moisture content of the finished powder, the time and temperature of storage and, as above pointed out, the oxygen content of the atmosphere in the container.

If dried products containing butter fat are to be consumed in relatively short periods of time, the problem is comparatively simple. On the other hand, where the product is to be exposed to unknown temperatures and required to have a shelf life of eight to 10 months, the manufacture and packaging of such products present real technical problems.

During the war a vast amount of information concerning the manufacture and packaging of whole-milk and ice-cream-mix powders was accumulated by the Quartermaster Laboratory, the state agricultural experiment stations and private industry. This work showed the importance of the use of high quality dairy products, thoroughness of evacuation of the oxygen and accurate control of various manufacturing operations if the keeping properties of dry whole milk and ice-cream mix were to be extended over long periods of time at various temperatures.

Methods of protective packaging

The oxygen may be removed from dry mixes containing butter fat by (1) packaging the product under a vacuum or (2) removal of the air from the container holding the product and replacing it with an inert gas, such as nitrogen or carbon dioxide.

In the vacuum method, a container is required that will maintain the desired vacuum over long periods of time. The container must necessarily be of sufficient strength to prevent its collapse when exposed to the atmospheric pressure, this being especially true in the case of containers that exhibit a large surface area that must withstand the pressure of the atmosphere.

The second method has proved the most practical for many products. Here the entire container is placed in a chamber, the air removed and nitrogen or carbon dioxide used to fill the space formerly occupied by the air. The container is then sealed. Inasmuch as equilibrium has been established between the pressure of the outside air and the pressure of the inert gas on the inside, we do not have the possibility of collapse on the container.

Two techniques may be used in the actual packing of such products with inert gas. With the first, the product is placed in the container and the lids pierced with a 1- to 2-mm. hole through which the air may be evacuated and the nitrogen gas admitted. After the product has been so treated in a vacuum chamber, the vacuum is broken with nitrogen gas, the can or bottle is removed and the hole is soldered, making a permanent package. The second way is to place the cover on the bottle or the can loosely while the air is being replaced with gas. (In the case of cans, they are run through a clinching machine which helps to hold the covers in place but does not prohibit the withdrawal of the air from the container and subsequent replacement with the inert gas.) After the bottles or cans are removed from the vacuumizing and gas chamber, they are passed through a final seaming operation.

The whole gas-packing process sounds relatively simple, but is much more involved than it would appear to be from the above description. One of the practical problems is to obtain as complete an evacuation of the oxygen in the container and the product as possible. It has been found that the oxygen content of the gases in the container should be under 3% at least one week from the time of gas packing, in order to insure good keeping properties for the product over considerable periods of time.

Problem of entrapped oxygen

It has been found, moreover, that the amount of free oxygen in a package that has been gas packed actually increases over a period of several days following packaging. This is shown in Fig. 3. This oxygen is known to come from air (*Continued on page 176*)

Fig. 2—Action of fat in contact with oxygen

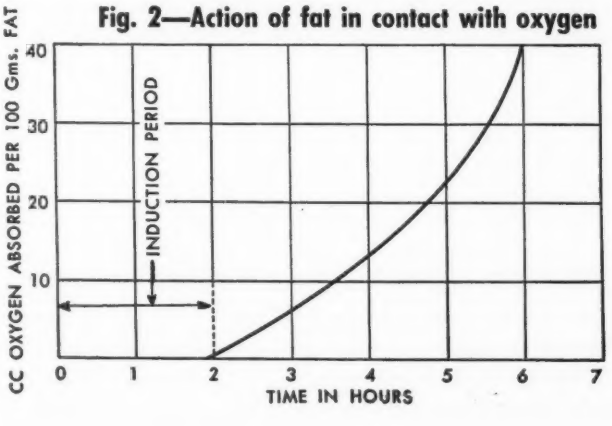
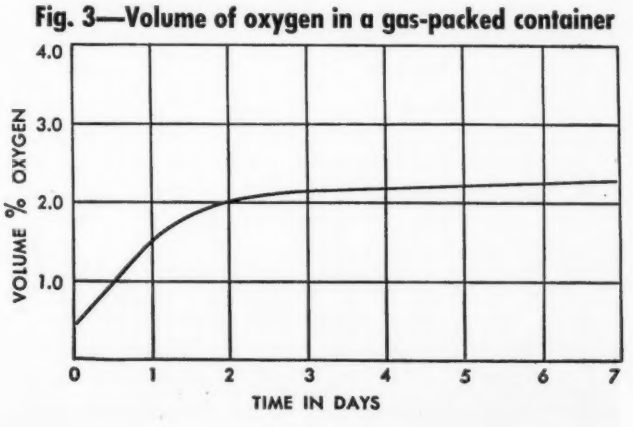


Fig. 3—Volume of oxygen in a gas-packed container



CANDY TRENDS

NEW FAMILY of packages for Mrs. Steven's candy expresses the home-made idea with the use of a kitchen-plaid design, but a high quality note is introduced through the use of embossed, silver-printed, paneled name card. Colors are burgundy, pink and white. Floral design is used on round metal box. Sample label insert is one used on box illustrated at far right in upper photo on right-hand page. LABEL INSERT COURTESY MICHIGAN LITHOGRAPHING CO. AND MUTUAL PAPER BOX CO.

Present increasing supplies of sugar, chocolate and other ingredients for confections are being reflected noticeably by the renewed interest in package redesigns in the candy field.

This indicates stiffer competition in the confectionery field and firms all over the country apparently are reviewing their packaging with an eye to the relationship between consumer eye appeal and the cash register.

Out in Chicago, Mrs. Steven's famous candies have been given a new family resemblance and package personality to reflect the type of operation that characterizes this business, which Mrs. Julia Steven started 20 years ago in her own kitchen.

This business has expanded to a chain of 20 retail stores, a number of leased departments in department stores and a sizable wholesale business, selling dealers all over the country. But even with the growth of operations, the candies are still made to home recipes and are hand rolled and hand dipped.

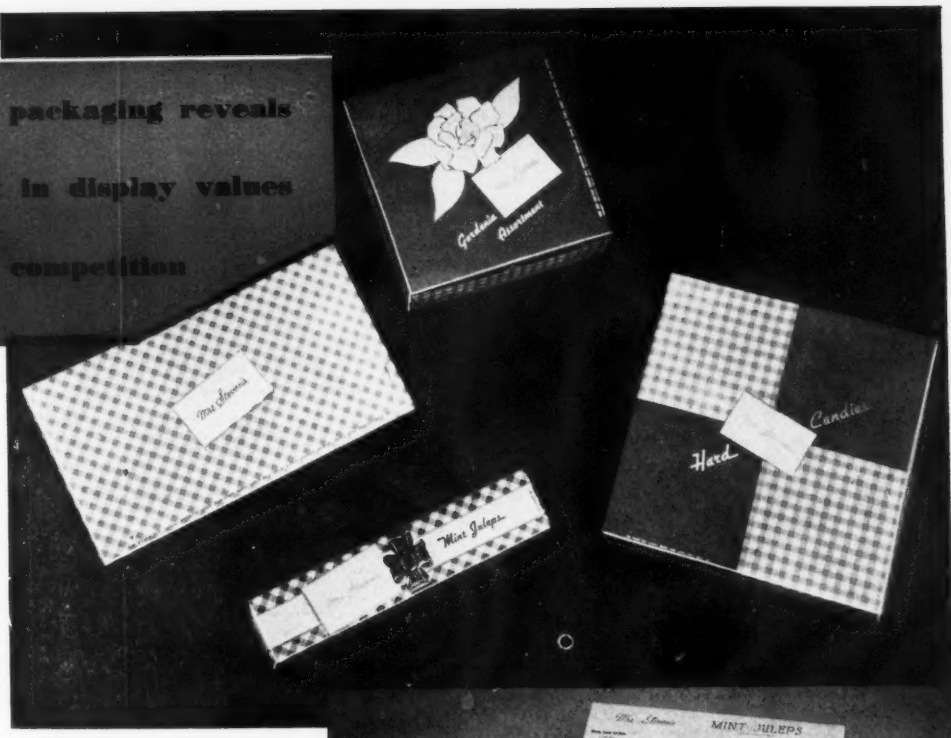
In redesigning the whole line of packages for these candies, the designer has used a recurrent motif of a kitchen gingham plaid to convey the feeling of home-kitchen manufacture in the packaging. The basic color scheme is burgundy and rose pink, with white, worked into various arrangements of solid color areas with the plaid. The name, Mrs. Steven's, is emboss printed in silver on an embossed paneled name card, which gives a quality look in keeping with the high quality of the candies. All wraps are printed on coated stock and burgundy areas are spot varnished. Floral effects have been introduced on the solid-color cover areas for a round metal box and the company's Gardenia assortment.

The whole packaging program is one of integrated design done in good taste and in colors that are pleasing and effective for display.

Holbrooke Candies, Inc., of New York also had the problem of creating a package atmosphere expressive of a home-made type of candy for a new addition to its other packaged lines and planned to sell in the moder-

Hard
Mrs. Steven's
Candies

New confectionery packaging reveals an intense interest in display values to meet increasing competition



CONTRASTING the new packages (right) with the old (below) reveals the improvement in color and display effectiveness which has been achieved by the redesigned packages.

ate-priced class for national distribution in 1- and 3-lb. sizes.

The problem meant not only a new package, but also a name, Kitchen Maid, for the candies, which grew out of the package design. The original sketch for the design was first made on paper and pasted on a dummy box. The finished design was made from actual gingham and linen. An experienced needle woman embroi-

LAMINATED FOIL tight wrap lacquered in blue and printed in red and white has been introduced by Elmer's in New Orleans for their Heavenly Hash. The wrap gives the package a colorful appearance and is said to keep candy fresh longer.

JOSIAH SPODE "tower" pattern, used 167 years ago on fine dinnerware, has been adapted as the trademark design for Harry Brown Confections. Gold-lacquered, vacuum-packed metal containers carry the same design in three colors.

DOUBLE LIFE is given this transparent box made of acetate with metal ends. A slot in the top converts the container into a penny bank for child's use after the candy has been eaten.

dered the traced design on the linen in colored yarns. The embroidered fabric was photographed, then lithographed and embossed to give a "textured" feel to the finished boxes. The plaid is red and white; the panel, buff with lettering and design motifs in the red, yellow, blue-green colors of an old-fashioned sampler.

Harry Brown Confections, Tacoma, Wash., is introducing vacuum-packed candies in key-opening round tins for national distribution. A new package theme was needed to express the quality of these confections and to give them trademark identity for national advertising.

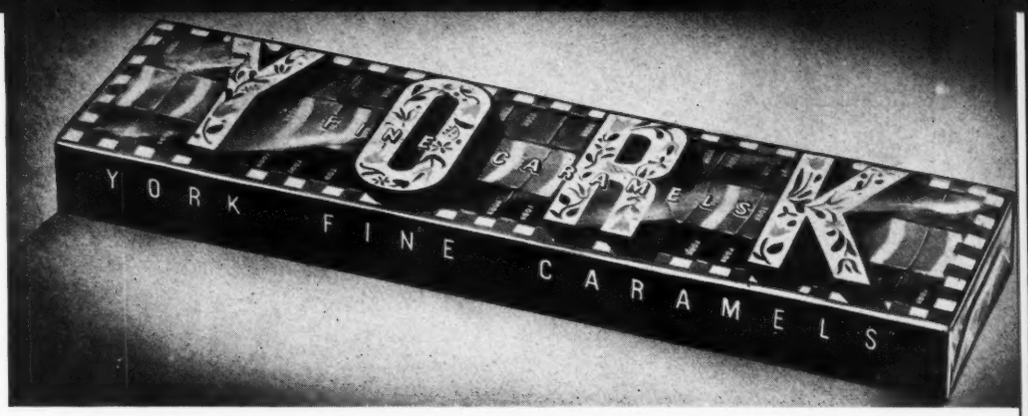
The lithographed design chosen is the 167-year-old tower pattern originated by Josiah Spode for English dinnerware. A Spode plate is thus reproduced as the cover motif and is to become the trademark for these highly specialized candies. Three different colors differentiate the three types of confections: the pink tower for Almon Omega, blue tower for Pecan Carmel Rolls and brown for Pecan Parisian creams.

These confections, which gained wide favor during the war because of their vacuum packing that could be shipped anywhere, are being promoted with a slogan, taken from the package design: "Under the sign of the Spode plate, the world's finest candies." Thirty sales representatives are selling these candies to quality outlets throughout the nation.

Metal containers because of their protection, their reuse value and the colorful printing that is possible have many advantages for the packers of candies. An interesting example just on the market is the Ming crystallized-ginger candy package distributed by Stephen Leeman Products, New City, N. Y. Five colors are blended to form the oriental motif lithographed on the outer surface of the can.

In New Orleans, the Elmer Candy Co. is particularly pleased with its new heat-sealed tight wrap for Heavenly Hash—a laminated combination of foil, wax and paper. The outer foil surface is covered with transparent blue lacquer studded with white stars and

ORIENTAL MOTIF in five colors provides a striking example of color lithography on a metal container for this package of Ming crystallized-ginger candy. A square patch for trade name is lithographed directly on container.



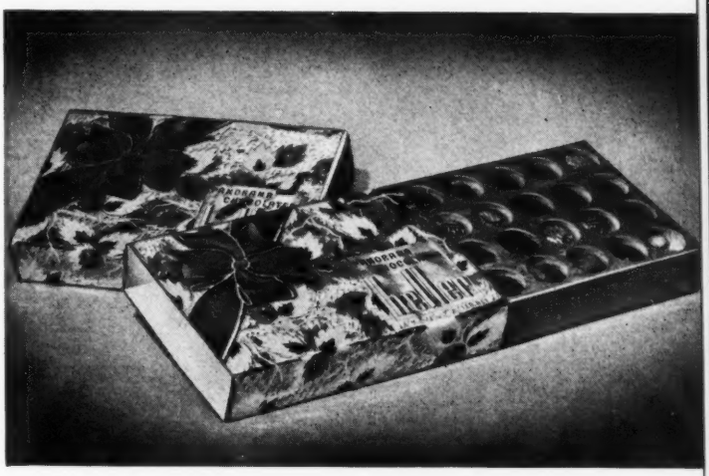
COLOR PRINTED outer cellophane wrap using a Pennsylvania Dutch theme as the design motif for this tray package. The coloring—red, olive green and yellow—is unusual.

printed with bright red lettering, providing a brilliant background for a confection with such a celestial name. The foil wrapper is an aid in helping to keep the product fresh longer.

John Heller, president of Heller Candy Co., has solved the problem of seasonal boxing with a changeable sleeve for Heller's new assortment called Panorama. The box itself has a lid, die cut with circles, through which each piece of candy is visible. The candies are secured in place by interior dividers and by a cellophane overwrap. The sleeve fits over the box. The first one was introduced for the Christmas season. It is printed with suitable holiday motif in black, gold, pearl and scarlet on embossed gold foil. Other sleeves will be introduced during the year for such occasions as Easter, Mother's Day, etc. The wrappers are mailed to retail outlets with instructions that the new wrapper is to be used on the manufacturer's box for the appropriate season. For a small expense the manufacturer can thus have six or seven different package changes throughout the year without having to make an entirely new box.

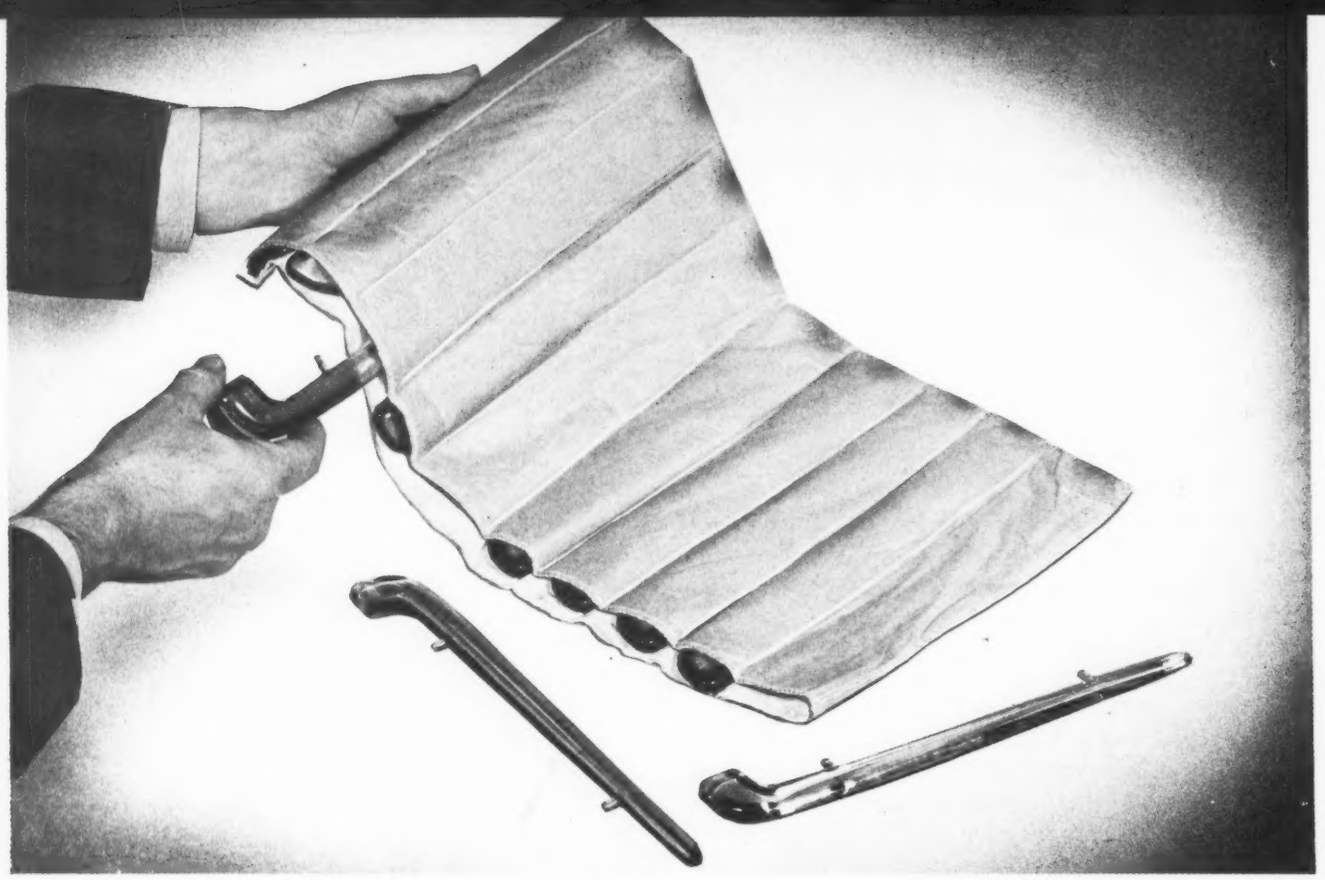
York Caramel Co., York, Pa., has launched the first of a series of cellophane-wrapped tray packages for its 1-lb. assortments of vanilla, nougat-striped vanilla and chocolate caramels. The cellophane is colorfully printed with the name York worked in letters with Pennsylvania Dutch floral design in red, olive green and yellow. A 1-lb. bag package to be distributed soon will carry the same motif. Outlets will be grocery, drug, variety, confectionery stores and tobacconists. The item is planned with visibility appeal for impulse selling.

Credits: **Mrs. Steven's**—*designer, Jerome E. Walter, East Orange, N. J.; wraps, Michigan Lithographing Co., Grand Rapids, Mich.; boxes, Mutual Paper Box Co., Chicago; metal container, Heekin Can Co., Cincinnati.* **Holbrooke**—*designer, Thomas D'Addario, New York; box wrappers, Consolidated Lithographing Corp., Brooklyn, N. Y.; boxes, Foster & Cross, Brooklyn; cellophane, DuPont and Sylvania.* **Harry Brown Confections**—*metal lithographed containers, American Can Co., Seattle, Wash.* **Elmer's Heavenly Hash**—*foil wrap, Reynolds Metals Co., Richmond, Va.* **Heller Panorama**—*sleeve, Richard M. Krause Co., New York.* **York Caramels**—*designer, Erik Nitsche, New York; tray, Container Corp. of America, Chicago; cellophane wrap, Nashua Gummed & Coated Paper Co., Nashua, N. H.* **Ralmi candies**—*container, Wienman Bros., Inc., Chicago; acetate material, Lumarith made by Celanese Corp. of America, New York.*



SERIES OF SLEEVES which can be slipped over this cellophane-covered, die-cut, partitioned box has solved the problem of seasonal package changes for the Heller Candy Co. The first of these sleeves was used for the Christmas season and was of embossed gold foil richly printed in black, gold, pearl and scarlet.

ACTUAL RENDERINGS made of gingham and linen and hand embroidered were the basis for the design of Kitchen Maid candy packaged in 1- and 3-lb. sizes. Material was photographed and reproduced with a "textured" feel by means of embossing. The gingham design is a red and white check; lettering and design motifs are in the red, yellow and blue-green colors of an old-fashioned sampler, reproduced on the buff oval.



INDIVIDUAL POCKETS are formed in envelope by stitching a blanket of creped cellulose wadding to provide a re-usable container for acrylic radiator ornaments for Ford cars. Ten ornaments go into each envelope and 46 envelopes in a shipping carton

POCKETED PLASTICS

Compartmented envelope with protective lining guards molded acrylic ornaments in route to the assembly line at Ford's

When G. Felsenthal Sons, Chicago plastic firm, went into production recently on a new acrylic hood ornament for the late 1947 Ford car, a packaging problem was immediately encountered.

The completed plastic parts, after removal from the molding press, are shipped to another Ford supplier who mounts them in a chrome-plated metal casting, ready for assembly in the finished car. In order to protect the jewel-like finish of the plastic pieces, it was necessary to develop a special packing container.

Requirements for the container included a soft, abrasive-proof material which would enclose the finished piece, in addition to a firm binding for the parts so that they would not be damaged in freight handling. Working in conjunction with a paper converter, an easy and effective method of packing the ornaments in a 10-pocket unit was devised.

The pocketed envelope, somewhat similar to those which have been successfully used by silverware manufacturers for shipping flatware, is formed by cutting, folding and stitching creped cellulose wadding. Thus, each pocket is lined with a scratch-preventive material, neutral and lint-free, which is said virtually to eliminate surface marks caused by handling. Forty-six of the pocket-like containers are packed in a 200-lb.-test regular slotted corrugated carton for shipment to the assembler of the car.

In addition to the fact that the envelopes afford the firm the virtual equivalent of individual lined packages, which would have been out of the question cost-wise on an item of this nature, the pocketed containers also are re-usable. They are assembled and returned to the supplier, making a number of trips before it is necessary to discard them. Packaging operations are handled directly at the press by the same operator who handles the molding of the parts.

CREDITS: *Envelopes, Cromwell Paper Co., Chicago, using Type 4-201 Kimpak material by Kimberly-Clark Corp., Neenah, Wis. Shipping containers, Stone Container Corp., Chicago.*

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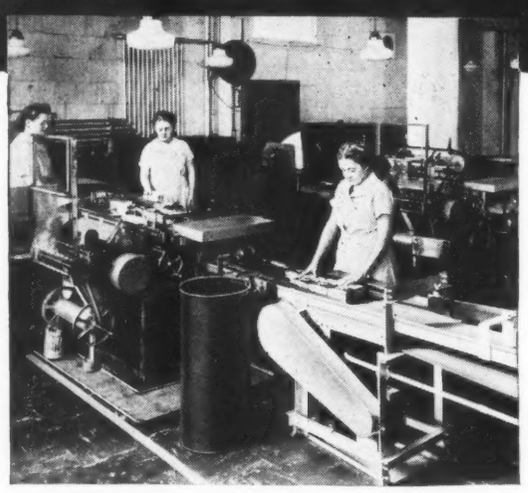

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DISCOLORATION of packaged red meat*

Lack of oxygen found to be the cause; sodium bisulfite treatment of wrapper reduces problem and development of an oxygen-permeable transparent film may finally solve it.

By C. G. LAVERS†

One of the last major food items to resist pre-packaging for retail sale is meat. This product is now beginning to be packaged for self service and in most places where the experiment has been tried it has met with considerable success from the viewpoint of sales (1, 2)[1]. Some technical difficulties must be overcome, however, before packaging is completely successful.

One of the greatest difficulties is that of discoloration. Fresh red meats (e.g., beef) when in contact with packaging material such as cellophane turn a dark, unattractive, brown color in from three to 24 hrs.

Several attempts have been made to prevent or reduce discoloration. Pieces of fat may be placed on the surface of the meat to prevent the wrapper from coming into contact with it (1). Steaks, etc., may be placed in fibreboard trays with sides high enough to prevent the cellophane top from touching the meat (1). The pieces of meat may be stacked with sheets of "peach market paper"[2] between the slices for 24 hrs. and then wrapped in cellophane. This treatment delays discoloration considerably (2). A special grade of cellophane (MSADT) which has a moistureproofing lacquer on one side only (uncoated side used next to meat) has been found to reduce discoloration somewhat, but it is not entirely satisfactory when used in conjunction with present-day display equipment. If showcase temperatures were lowered to about 32 deg. F., MSADT cellophane might solve the problem.

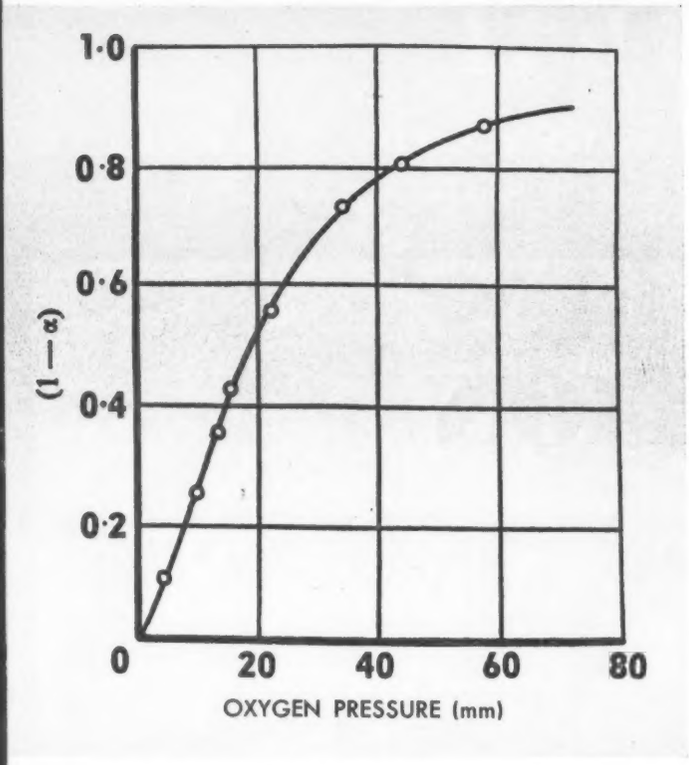
The constituent of meat responsible for its color is known as myoglobin or muscle hemoglobin. While muscle hemoglobin and blood hemoglobin are probably not identical chemically, they react similarly and, for the purposes of this paper, will be considered together under the common term of hemoglobin. As indicated by the name, hemoglobin consists of two parts; *heme*, the iron-containing fraction, and *globin*, the protein fraction. The forms of hemoglobin in which we are chiefly interested are:

Reduced hemoglobin or, simply, hemoglobin. In reduced hemoglobin the iron is in the ferrous (Fe^{++}) state. The color of this compound is dark red or purple and is responsible for the dark color in the interior of meat which can be seen when it is first cut.

Oxyhemoglobin. In oxyhemoglobin the iron is still in the ferrous (Fe^{++}) state, but this compound contains more oxygen than reduced hemoglobin. The oxygen is held only in loose combination and can be removed with a vacuum pump. No true oxidation has taken place, only oxygenation. Oxyhemoglobin is bright red and is responsible for the attractive bright red color of meat. When meat is cut and a surface exposed, the dark-red hemoglobin takes up oxygen from the air, forming bright-red oxyhemoglobin.

Methemoglobin and other hemoglobins. Methemoglobin contains no more oxygen than reduced hemoglobin, but the iron has been oxidized to the ferric

* Issued as Paper No. 199 of the Canadian Committee on Food Preservation and as N.R.C. No. 1666.
† Of the Division of Applied Biology, National Research Council (Canada) Laboratories, Ottawa, Canada.
[1] Numbers in parentheses refer to "References" appended.
[2] Peach market paper is commonly used by butchers for lining trays and interleaving between steaks to give the meat a good color.



1. OXYGEN DISASSOCIATION curve of hemoglobin. 1-α is fraction of hemoglobin in form of oxyhemoglobin.

(Fe^{+++}) state, a true oxidation. This material is dark brown in color.

In addition, hemoglobin will combine with various substances (carbon monoxide, nitric oxide, hydrogen sulphide) to form stable compounds.

The most common and probably simplest method of identifying hemoglobin compounds is by measuring the wave lengths of light absorbed by them, i.e., their absorption spectra. Each compound has a characteristic absorption spectrum by which it can be identified. Several of these are described in Table I (3).

Experimental

The discoloration of red meat has been reported as a reaction between the meat and the coating on cellophane (5). However, it was of interest, firstly, to see if this discoloration was caused only by a particular wrapping material, such as the moistureproof coating on cellophane, and, secondly, to determine the nature of the brownish pigment.

Samples 2 by 2 in. were cut from the following packaging materials: MSAT cellophane, MSADT cellophane, LSAT cellophane, cellulose nitrate, polyethylene, Saran, Pliofilm, ethyl cellulose and MST cellophane coated with a flexible wax composition. These patches were placed on the surface of a red beefsteak and the meat was stored in a refrigerator at 45 deg. F. Without exception, considerable discoloration had occurred beneath all the patches within 24 to 48 hrs. Discoloration, therefore, was not a function of a particular packaging material.

After 48 hrs., the patches were removed from the meat and a thin slice $^1/_{16}$ to $^1/_8$ in. thick was taken from each of the discolored areas. Each of the samples was trimmed to 2.00 gm. and then placed in a separate flask, 20 ml. of distilled water added and the flask shaken gently for half an hour. The extract was then filtered and its absorption spectrum measured using the Beckman quartz spectrophotometer.

The spectrum of each of the extracts showed absorption maxima at 4,980–5,020, 5,380–5,420, 5,770–5,800 and 6,300–6,340 Angstrom units. This corresponds almost exactly with the regions of light absorption by methemoglobin as shown in Table I. Small variations in the maxima were probably caused by the presence of materials other than methemoglobin, but it was the predominant colored material present. Discoloration, therefore, was caused by the change of oxyhemoglobin to methemoglobin.

Since discoloration is caused by oxidation and since it is well known that sodium bisulfite will preserve the color of meat, wrappings treated with reducing agents were tried as a means of preventing discoloration. Tests using MSADT cellophane treated with ascorbic acid or sodium bisulfite showed that the former was of little value, while the latter was quite effective. MSADT cellophane soaked in a 5% solution of sodium bisulfite for 10 min., rinsed in distilled water and dried, maintained the red color of meat for 72 hrs. at 45 deg. F., both in patch tests and completed packages.

To verify that the bisulfite was acting only as a reducing agent and not forming a red-colored combination product with hemoglobin, a sample of meat was taken from beneath a patch of bisulfite-treated MSADT cellophane and its extract analyzed spectrophotometrically. The analysis showed only oxyhemoglobin. As a further check, a sample of red meat was placed in a vacuum desiccator which was then evacuated until the only color visible in the meat was the dark red of reduced hemoglobin. The desiccator was then filled with nitrogen and a piece of bisulfite-treated MSADT cellophane placed on the surface of the meat. The red color did not return to the meat, showing that bisulfite is incapable of producing a red color in the absence of oxygen. Its only apparent action in air is to prevent a change from oxyhemoglobin to methemoglobin.

This work shows that packaging materials such as MSADT cellophane treated with a suitable reducing agent can be used for wrapping meat without causing discoloration. Tests showed that the water extract of peach market paper was capable of acting as a reducing agent, so it is probably a reducing agent that gives this paper its power to preserve the color of meat.

It is not suggested that bisulfite is the only reducing agent suitable for this purpose and, indeed, it may have some serious drawbacks. However, the work indicates the lines along which future research may proceed.

It has been shown that the discoloration of red meats is due to a change from oxyhemoglobin to methemoglobin. The question may then be asked, "Why should

TABLE I—LIGHT ABSORBED BY HEMOGLOBIN COMPOUNDS

Compound	*No. of bands*	*Wave length of absorption band, Angstrom units*			
Reduced hemoglobin	1	5,650		..	..
Oxyhemoglobin	2	5,769	5,448		
Methemoglobin	4	6,300	5,780	5,400	5,000
Carbon monoxide hemoglobin	2	5,709	5,350	..	
Sulphemoglobin	3	6,180	5,780	5,400	..
Nitric oxide hemoglobin	2	5,745	5,360	..	

oxidation be speeded up by the application of a packaging material such as cellophane, which cuts off the supply of oxygen from the air?" The explanation for this was found in the mechanism of the oxidation of hemoglobin.

Mechanism of the discoloration reaction

Methemoglobin and reduced hemoglobin form a reversible oxidation-reduction system of the ferri-ferrous type (4). Oxyhemoglobin is not an intermediate step in the formation of methemoglobin. That is, the path of the discoloration reaction is: oxyhemoglobin changes to reduced hemoglobin and the hemoglobin then changes to methemoglobin. To speed up the oxidation of hemoglobin, it is therefore necessary to have conditions favoring the formation of reduced hemoglobin from oxyhemoglobin. Fig. 1 shows the fraction of hemoglobin in the form of oxyhemoglobin under various oxygen pressures at 30 deg. C. The percentage of reduced hemoglobin increases rapidly as the oxygen pressure falls below 80 mm. We would therefore expect the discoloration to proceed more rapidly at low oxygen pressure. Fig. 2, giving velocity constants for the oxidation of reduced hemoglobin to methemoglobin, shows that this is so. The maximum reaction rate occurs at about 20 mm. oxygen pressure. At this point the oxygen pressure is sufficiently low to permit the formation of appreciable reduced hemoglobin from oxyhemoglobin (about 50%, Fig. 1) and it is still high enough to carry out the oxidation of reduced hemoglobin to methemoglobin.

When an oxygen-impermeable sheet such as MSAT cellophane is placed on meat, we get conditions suitable for rapid oxidation. The supply of oxygen from the air is cut off, the oxygen pressure beneath the sheet drops due to diffusion, bacterial action, etc., and the rate of oxidation to methemoglobin, i.e., the rate of discoloration is greatly increased. This assumption was checked by placing patches of vegetable parchment, which has a high oxygen permeability, on red meat. The area beneath the vegetable parchment did not discolor more rapidly than the uncovered surface.

The superiority of MSADT cellophane over MSAT may also be explained on the basis of increased oxygen permeability. When the exposed cellulose in MSADT cellophane became wet, its oxygen permeability would increase (6), maintaining the oxygen pressure and thereby retarding methemoglobin formation. The development of an oxygen-permeable transparent sheet may solve the problem.

Summary

1. Discoloration in packaged red meats held at chill temperatures is not caused by only one specific wrapping material or by the coating on that material.

2. This discoloration is caused by the formation of a dark-brown substance known as methemoglobin. Methemoglobin is formed rapidly when the pressure of oxygen around the meat is reduced by the packaging material. Different packaging materials transmit oxygen at different rates; those with slower rates of transmission cause more rapid rates of discoloration.

3. The discoloration can be retarded by the use of suitable reducing agents.

Acknowledgments

The author wishes to thank A. J. Cameron, Canadian Industries, Ltd., "Cellophane" Division, and Dr. J. A. Pearce of the National Research Laboratories for their helpful advice during the course of this investigation. Figs. 1 and 2 are used through the courtesy of J. Brooks, Low Temperature Research Station, Cambridge, England, and are taken from: Brooks, J., *Proceedings of the Royal Society of London, B118:* 560–577 (1935).

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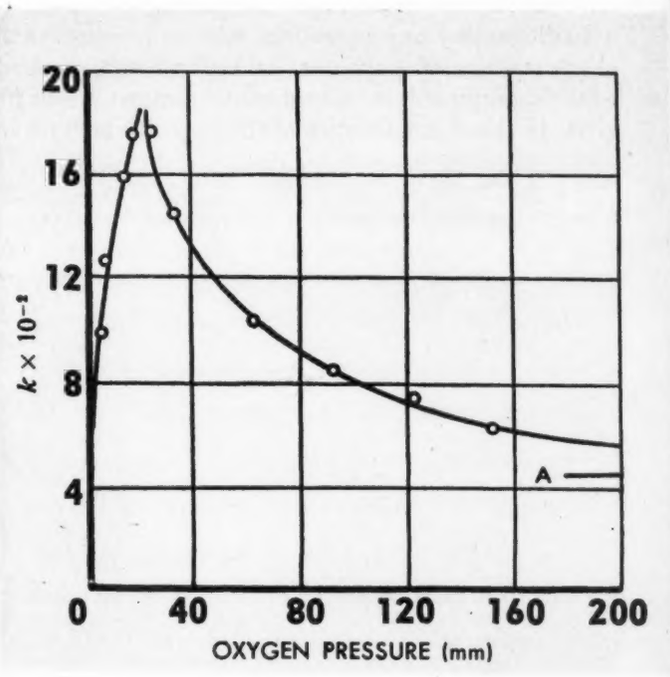


2. VELOCITY CONSTANTS (k), for the oxidation of hemoglobin to methemoglobin, at different oxygen pressure. A is the value at 723 millimeters of O_2.

PROOFING OF PAPER

By M. L. DOWNS*

From a practical standpoint, nearly all papers must receive some type of proofing. Paper or cellulose fibres in themselves are very easily wet and show practically no resistance to the penetration of liquids, vapors and gases. Therefore, we can say that even the simplest types of papers must be proofed in the papermaking operation, at least to the extent where they have some slight resistance to wetting by water. This is usually done by adding to the pulp slurry in the beater so-called sizing agents. These sizing agents are usually in the form of soap made by cooking rosin with caustic. Water-shedding particles are dispersed through the paper fibre by precipitating the water-shedding material by the addition of alum. Other papers are improved in their ability to resist water by being tubbed with water-dispersed materials, such as glue. Still others are improved in both water resistance and printing characteristics by being "coated" with mixtures of pigments and casein. Still other papers are made grease resistant by prolonged beating of the fibre, sometimes followed by heavy calendering.

While all these treatments are in some measure "proofing" operations, these are more generally accepted as part of regular papermaking operations and the true proofing operations are considered to be those where the papers are further treated by the addition of materials in converting operations after the base papers have been made on the paper machine.

In discussing any operation used to improve such characteristics of paper as its water resistance and water-vaporproofness, considerable thought must be given to the characteristics of the paper to be used in the converting operation. An extremely dense, even sheet, such as glassine, requires much less laminant than a soft, rough-textured sheet, such as machine-creped kraft. However, it is not always possible to select a type of paper requiring the minimum amount of proofing material. Very often the selection has been based upon other factors, such as caliper, rigidity in a drum wall, freedom from buckling on pasting, etc.

There are a number of ways in which proofing materials can be applied to paper. Without giving consideration to those methods which incorporate the material during the actual paper formation, let us go on to those methods used in strictly converting operations.

Hot melt is generally the most economical and simplest form. This is the method which utilizes the proofing material as a liquid produced by heating a thermoplastic material. Wax, asphalt and resins are typical of this type of application. Hot-melt application has the distinct advantage that the material to be applied to the paper carries no water or solvent to be evaporated.

The second method, emulsion treatment, requires that the proofing material be dispersed in water or some similar carrying medium and this water must be evaporated after application to the paper. The preparation of the emulsion usually increases appreciably the cost of the treating material.

The third method consists of dissolving the treating material in organic solvents. This is the type of treatment represented by lacquering. The cost of solvent is high and equipment usually must be designed for a considerable length of passage during the drying period in order to remove all the solvent. Most modern installations also require solvent-recovery equipment. Both chemical and equipment costs tend to increase the cost of this method considerably above the first two.

The last method of proofing consists in applying to the surface of the paper pre-formed or pre-cast films of such materials as cellophane, vinyl co-polymers and polyethylene. This method of proofing is relatively expensive because the film pre-casting operation must be done in a separate step and these films are usually much heavier than those laid down by the other methods of proofing.

Because paper can be produced in continuous wide webs of uniform surface characteristics, practically every protective treatment conceivable has been used or suggested in connection with the treating of paper. It must be borne in mind, however, that paper is essentially a low-cost material and the proofing materials must be priced in proportion to the cost field normal to the paper trade. If costs fall out of this range, then it

* Based on addresses given by G. E. McCorison, president of the Waterproof Paper Mfrs. Assn., and Dr. Martin L. Downs, technical director of the Thilmany Pulp & Paper Co., Kaukauna, Wis., at a meeting of the Fibre Drum Mfrs. Assn. held at the Edgewater Beach Hotel, Chicago, Oct. 17, 1947.

The proofing of paper has expanded beyond mere waterproofing to include proofing against mold, flame, grease and loss of strength when wet, using new impregnants, coatings or combinations with other materials. This is a technical report on the materials and processes currently being used to impart new and improved functions to papers such as are used in the construction of fibre drums, fibre cases and bulk wrappers.

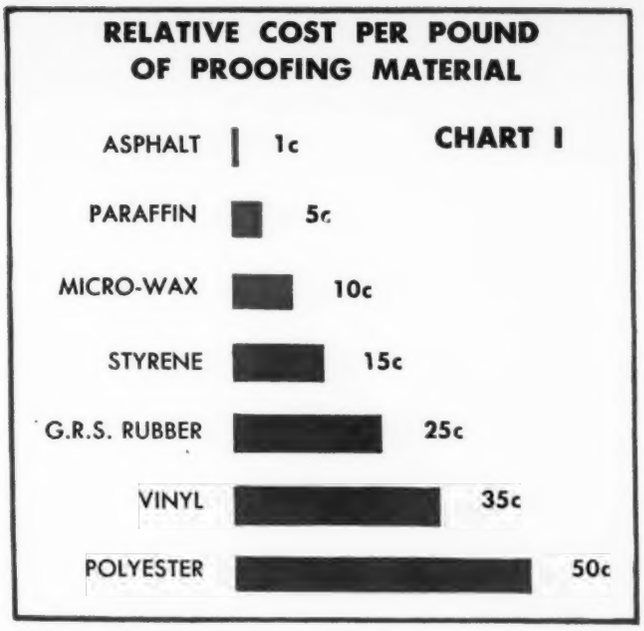
is natural to look to protective mediums other than paper, such as glass, metal or heavy synthetic films.

Chart I shows the relative cost of some of the more common materials used in the proofing of paper. The big three—asphalt, paraffin and microcrystalline wax—are all chemically unconverted products obtained from petroleum. They fall in a price range from two to 15 cents per lb. and the basic investigation conducted by the Bell Telephone Laboratories some 20 years ago established them as among the best of the water-vapor-resistant materials. There is no question that some special materials in the price range from 15 to 60 cents per lb.—such as vinyls, polyethylene and polyester resins—are fully justified where certain physical characteristics demand their use, but in general, if the problem is one of providing protection against water and water-vapor, the asphalt and wax-type products are by far the best choice, dollar for dollar.

We, as manufacturers of a very wide range of specialty papers, are interested in all the proofing methods. However, asphalt-laminated papers constitute the largest tonnage in our converting operations and they are of widest interest, since they are available at the lowest cost in a large range of widths suitable for almost any type of drum fabrication. Therefore, we will limit the balance of our discussion to the subject of asphalt papers.

Asphalt papers are almost exclusively treated with bituminous-type material obtained in the refining of petroleum. There are a great many grades of asphalt available, ranging from thin, liquid products to extremely brittle, coal-like resins. The grades used in proofing of paper usually range from semi-solids at room temperature to asphalts having a softening point up to the range of about 250 deg F. A considerable measure of technical information and experience should be available to the proofer of paper in order to make a proper selection of asphalts. For example, we in our own operation purchase nine distinct grades in relatively limited specification ranges. The relative flow point of an asphalt is usually given in terms of ring-and-ball softening point, which is an arbitrary point at which a definite weighted steel ball pushes through a briquette of the asphalt. Other important specifications include relative rates of needle penetration at 32, 77 and 115 deg. F. This test is a measure of the relative softness and flexibility in relation to temperature. Other tests include viscosity at the application temperature, stain or migration of oil out of the asphalt, bleed or temperature at which the asphalt will penetrate through the paper, low-temperature flexibility, etc. The paper waterproofer must select his asphalt so as to get the required characteristics of low odor, lack of stain, low-temperature flexibility and proper application viscosity, and these requirements must be selected depending upon the grades of paper and processes he is using.

In the refining of petroleum-base asphalts, the original product is blown with air and steam to remove volatile constituents and to harden the finished product progressively. The impression is sometimes obtained



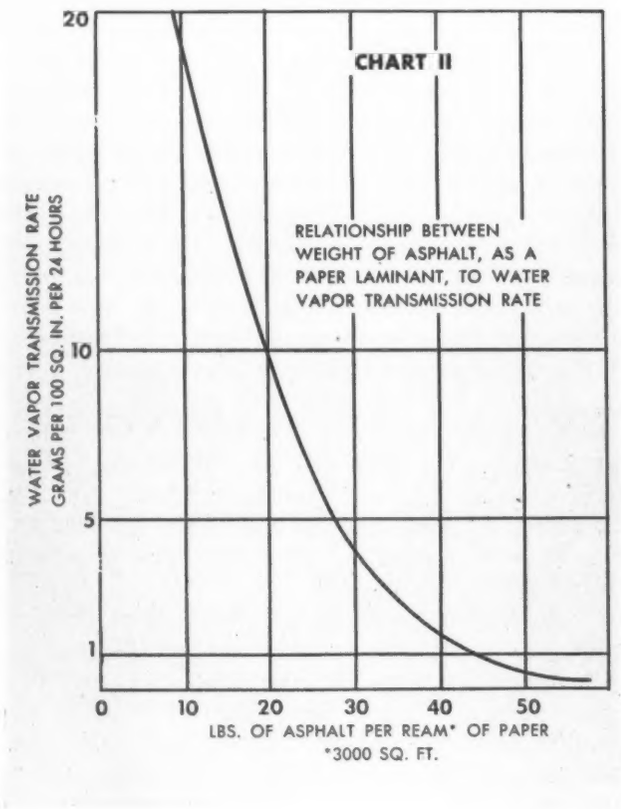
that the more an asphalt is "blown," the better it is for a fibre-drum barrier. This impression is not correct, since the blowing process, while it removes volatile ends, has a tendency to make the remaining oil less compatible and the asphalt may stain excessively. On prolonged aging, the asphalt may actually become more brittle because of the loss of these light fractions into the kraft of the drum wall. The decision as to how far an asphalt should be refined is based on a compromise depending upon the crude used, the softening point desired, the temperature susceptibility and lack of stain.

In applying asphalt as a hot melt for laminating or coating, one of several methods is employed. In all cases, the asphalt is pre-melted to the proper application temperature and is pumped continuously into a bath on the application machine. An excess of the asphalt is applied to the surface of the paper and the amount is then metered down to the desired weight either by passing the sheet between squeeze rolls, which remove the excess, or over blades, rollers or rods which meter the coat down to the desired weight, returning the excess back to the application bath. In both types of machine, close temperature control is important, uniformity of paper is mandatory and equipment must be in perfect mechanical condition so as to guarantee uniformity across the web. This is particularly true in wider machines, such as the 10-ft.-wide unit we operate on grades which go into fibre drums. Quite frequently, the application machines are backed up with a considerable amount of auxiliary equipment for melting and blending the asphalts used. For very high temperature work, specialized heating—such as high pressure steam, hot oil or diphenyl-vapor heating—is required. It is particularly important that coats be applied uniformly, without voids or skip spots, and several manufacturers, including ourselves, apply the portion of the coating to each of the sheets going into the lamination so that continuity of asphalt barrier is guaranteed and

so that the possibility of skip spots is eliminated.

The weight of asphalt in the lamination is important. It must be of sufficient caliper to cover the paper fibres completely and to prevent any wicking across of water or water vapor from one side of the barrier to the other. Chart II shows the relative water-vapor transmission in terms of grams transmitted per 24-hr. day, plotted against the relative weight of asphalt per 3,000 sq. ft. of laminated paper. It will be seen that water-vapor transmission drops off very rapidly at asphalt weights above 30 lbs. per 3,000 sq. ft. and approaches extremely low rates when the asphalt weight approaches 50 lbs. per 3,000 sq. ft. These figures are for plain M.F. and M.G. kraft papers. If coarser-textured papers are used, or if additional material is inserted as for example reinforcing strands, then the weight of asphalt must be increased to give equivalent protection. A creped asphalt-duplex sheet should always carry considerably more asphalt to give the same protection as the same sheet uncreped. Reinforced grades very frequently carry asphalt weights in the range of 90 to 180 lbs. of asphalt per 3,000 sq. ft.

The selection of both basis weights of paper and asphalt for asphalt-laminated papers for drum construction will depend upon a number of factors. In fibre-bodied cans of small diameter to be used for such products as the packaging of salt, a light-weight combination, such as 30-20-30 or 30-30-30—the middle figure representing asphalt weight and the two outside figures paper basis weights—may be entirely suitable. For heavier drums in the range of 50-lb., 100-lb. or $^1/_2$-barrel size, much heavier combinations may be desirable. The volume of adhesive used in the larger drums makes it almost impossible to use papers lighter than 40 or 50 lbs. basis weight and it is frequently desirable to go to sheets considerably heavier. If good water-vapor-resistant protection is required, we certainly would not recommend consideration of asphalt weights any less than 50 lbs. and preferably considerably more. If fairly heavy-weight M.F. kraft of rough texture, as for example nine-point, is used, then asphalt weights ranging up to 80 or 90 lbs. are fully justified. The cost of the additional asphalt is not appreciable in relation to the total cost of the barrier board. For some specialized uses where the board is to be exposed to the weather, additional treatment such as resin impregnation, asphalt impregnation and wet-strength treatment of the base papers may be desirable.



When going to the supplier of your barrier board, it is well to advise him on the conditions under which the material is to be packed. For cold-packed products, a softer asphalt may be desirable, while, for materials to be packed extremely hot, much higher softening-point asphalts must be used. For general-use drums, a compromise grade of asphalt should be selected.

It is not advisable to recommend the hot packing of fibre drums with asphalt barriers if the product packed exceeds 250 deg. F. Conditions will vary somewhat, depending upon the type of cooling used after packing, the specific heat of the product being packed, etc., but we believe that, in general, the wall of the drum should not get above 170 to 180 deg. F. over an extended period, or the asphalt will have a tendency to migrate into the kraft layers and give either a separated barrier or one so low in asphalt weight that inadequate protection will result. The asphalt or other laminant which has diffused into the kraft serves very little to give water-vapor protection. The film must remain continuous in order to guarantee good resistance to water-vapor penetration.

As to the relative value of microcrystalline wax versus asphalt, we can give the broad generalization that only about half as much microcrystalline wax is required as is recommended for asphalt. This is principally because of the fact that the microcrystalline wax has much better flexing characteristics at lower temperatures. However, it must be borne in mind that the normal grades of microcrystalline wax will begin to soften and bleed into the kraft at 100 to 110 deg. F.; that even when heavily compounded, they are still not safe for temperatures much above 130 deg. F. and that if drums are either packed hot or stored at elevated temperatures—as for example in steel box cars—failure of the barrier may result because of the flow of wax.

Asphalt has some serious limitations. It does not have the absolute impermeability of a solid-metal drum nor the extreme low-temperature flexibility of a polyethylene film but, of all the effective waterproofing and water-vaporproofing materials available to the paper trade, it is one of the best and also one of the least expensive and, therefore, for drum fabrication a very logical choice.

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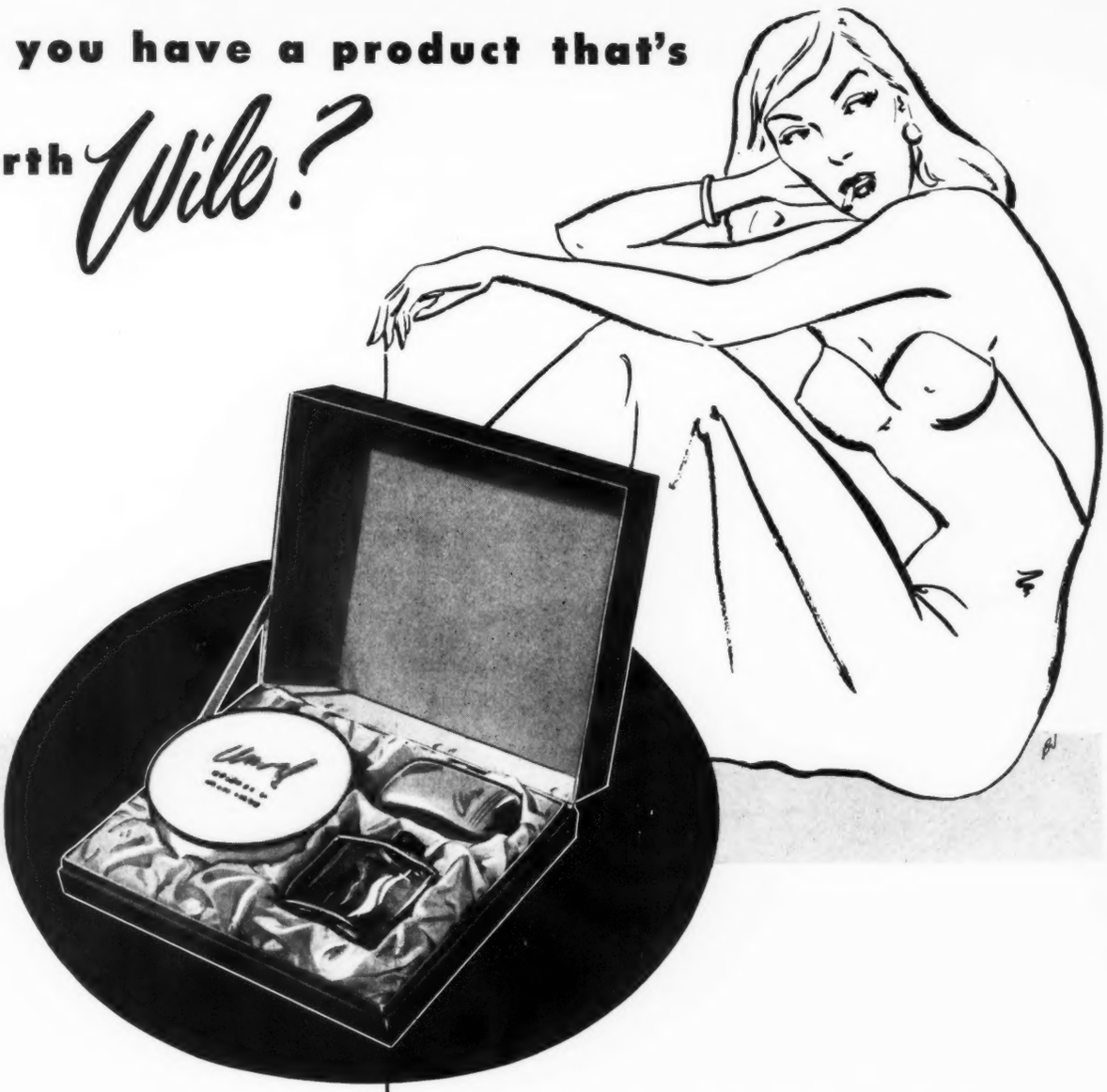

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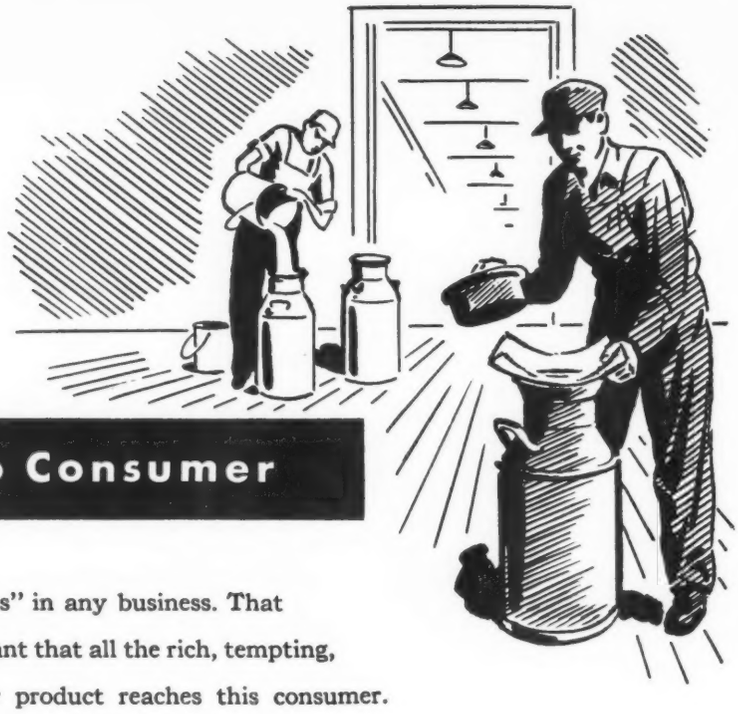

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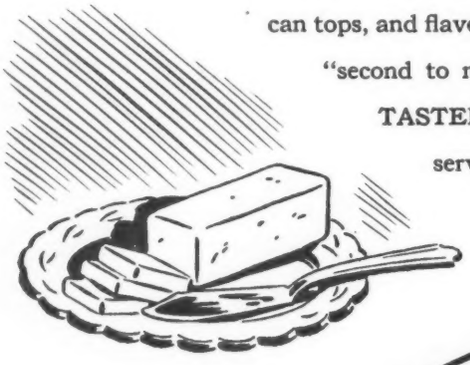

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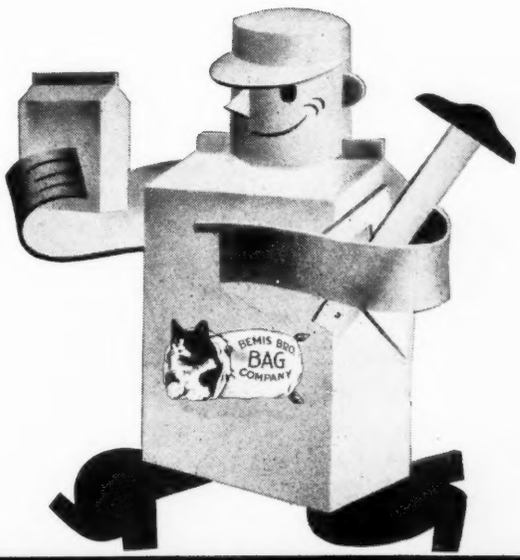

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*City*_____ *State*_____

Questions and Answers

This consultation service on packaging subjects is at your command. Simply address your questions to Technical Editor, Modern Packaging, 122 East 42nd St., New York 17, N. Y. Your name or other identification will not appear with any published answer.

Durable seal for pottery containers

QUESTION: We are packers of various kinds of syrups and for a portion of our packs we use pottery containers. The pottery jars we use have various diameters for openings, but unfortunately these openings are not perfect circles, have small irregularities, etc. Even though we attempt to force corks into the jugs, it is not always possible to make tight closures. Can you suggest sealing compositions which would help us? We have tried paraffin waxes at various melting points, but they do not effect a satisfactory and durable seal.

ANSWER: It is not surprising that you have not been successful in solving this problem with unmodified paraffin waxes because of their lack of suitable physical properties, as well as their low melting point. However, it would appear that certain wax modifications or mixtures could be found that could be applied in molten condition between the cork and jar or used by dipping the entire jar finish. A number of adhesive mixtures should meet your conditions. However, it would appear necessary that some means be taken to cool the wax immediately after it has been applied. This would prevent the adhesive from being drawn down into the container. It is suggested that you contact hot-melt or adhesive suppliers for a series of samples so that you may determine which is best suited to your operation.

Heat sealing of glassine envelopes

QUESTION: We are heat sealing the top of laminated glassine envelopes using jaw-type sealers with corrugated faces. We are continually bothered by the laminating agent coming out in the heat-sealing operation and in spite of our periodic clean-ups, it gets on the surface of the envelopes and makes them sticky. We have tried both lowering the temperature and using the least possible pressure, but have not succeeded in solving this problem.

ANSWER: Heat sealers with corrugated-type jaws are not recommended for the heat sealing of glassine which contains a waxy laminating agent. Such corrugated jaws are liable to crack the glassine, allowing the laminating agent to come through the sheet or engage so closely that the laminate is forced out the adjacent cut edge of the sheet. It is dangerous to reduce temperatures and pressures too much because of the possibility of pour and variable sealing. A better answer to your problem would be to use coarse and rounded corrugations if you prefer that type of jaw, or a smooth-faced sealing jaw. Also, it is suggested that the sealing operation be performed a short distance below the lip of the bag so that the laminating agent is not forced out of the cut edge.

Protecting labels against abrasion

QUESTION: We have been making shipments to India of one of our products which is packaged in a bottle with a printed label. We have been receiving reports that the labels are arriving in a very bad condition due to abrasion of the printing because of rubbing within the shipping cases. Can you suggest a means of protecting the label surface against injury in transit to tropical countries?

ANSWER: If you are using a very highly finished paper which has no surface coating over the inks, then the inks are vulnerable to smearing by abrasive forces which develop in long-distance shipping. You can protect the ink and the surface of the label by using an over-all coating of lacquer applied in sufficient quantity to give high gloss and of a type which has good slip and low frictional characteristics. So-called "spirit" varnishes or press-applied coatings do not usually provide enough durability or proper frictional characteristics required by this type of label. Perhaps with a lacquer coating over the printing you can use a less highly finished paper and obtain better anchorage of ink without sacrifice of gloss.

Polyvinyl carbazole resin

QUESTION: We are enclosing a small sample of a paper coated with a plastic which we think would be interesting for some of our packaging applications in this country (Belgium). Would you please tell us the composition of this material and whether or not it is available in the United States.

ANSWER: The sample which you submitted has been identified as being made from polyvinyl carbazole and contains no paper or paper fibres. This resin was produced in limited quantities in Germany before the war and found application in the electrical field. However, very little of it is produced in the United States today. It is not particularly suited for packaging applications because of high cost and limited functional properties.

Counter Merchandisers sell a lot of goods!

The basic qualities that we build into all our creations will work for you as well as for our clients.

They are:

- Simplicity of construction
- Unusual attractiveness
- Sturdiness
- Easy setup
- Economy

A discussion of *your* problem should be of mutual interest and is entirely without obligation.

BROOKS & PORTER, Inc.

304 HUDSON STREET • NEW YORK 13, N. Y.

We checked consumer preferences!
We canvassed packer demands!
We gave it top priority with our expert designers!

We introduce the

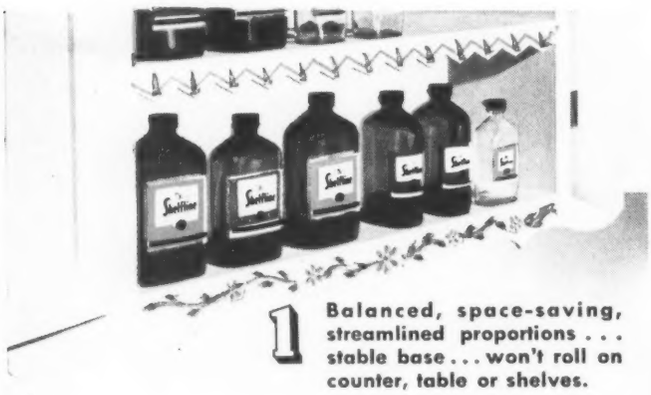
a new line of Duraglas *containers*

TRADE MARK REG. U.S. PAT. OFF.

Months of intensive research, designing and engineering have produced our new "Shelfline." These squared oblongs are made-to-order —your orders and your customers'!

Here are the container advantages you and Mrs. Consumer told us you wanted—advantages which the new "Shelfline" offers:

3 **Wide front and back panels for maximum label display... adequate space for side labeling if desired.**



1 **Balanced, space-saving, streamlined proportions... stable base... won't roll on counter, table or shelves.**

4 **Twelve sizes:**
½ oz., ¾ oz., 1 oz., 2 oz., 3 oz., 4 oz., 5 oz., 6 oz., 8 oz., 12 oz., 16 oz., 32 oz.!

2 **Easy-to-pour-from—new style shoulders act as a *funnel*...**

5 **Only *four* cap sizes required to fit *all twelve* sizes of the narrow neck line.**

Shelfline!

6 *Three colors: emerald green, flint and amber to fit every need!*

You will find this new "Shelfline" adaptable to high-speed automatic filling and labeling equipment. It can replace many of your present containers, simplifying and securing family identity throughout entire lines. Call on us—we can fill your needs *NOW*.

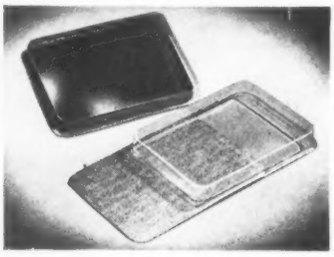
Duraglas CONTAINERS—PROTECTORS OF QUALITY

OWENS-ILLINOIS GLASS COMPANY • TOLEDO 1, OHIO • BRANCHES IN PRINCIPAL CITIES

Equipment and Materials

ACETATE BOX OF UNIQUE CONSTRUCTION

Plastic Artisans, Inc., White Plains, N. Y., in an effort to launch a display box in a moderate price range, has developed a formed acetate container known as the Slide-Vu, consisting of an acetate dome or cover and a boxboard base that slides into grooves in the dome. The formed or deep-drawn dome is rectangular in shape. However, it can be formed to fit the contours of the merchandise it houses and displays. It is so constructed that the one-piece board base upon which the merchandise may be mounted will slide into the tracks in the dome and retain the merchandise in position. It may also be used for soft goods, such as hosiery and textiles, where the merchandise is not mounted, but simply backed by a card insert. Bases of plain or fancy board may be used.



Boxes are shipped in two parts. The domes are designed so they will nest, thereby cutting down shipping space and storage. Printing may be done by offset or silk screening.

HEAT SEALER

The device shown in the accompanying photograph was recently developed by Waage Electric, Inc., New York, for heat sealing packages in a wide variety of sizes. The unit consists of three separately heated aluminum castings adjustable from 2 to 8 in. Each heated platen has its own individual thermostat control which may be set for any temperature from 100 to 500 deg. F.

SPRAY ELIMINATES OFFSET IN PRINTING

Payne & Craig Corp., New York, have been appointed national sales representative for Craig Dri-Spray, developed by the Craig Corp., New York, after 10 years of research. This unit, which fits all presses for all processes, is said to eliminate offset in printing. It operates on the principle of injecting dehydrated air into dry, specially formulated powder contained in the lower half of the spray tank to create a thin cloud of powder-laden air in the dome of the tank. This non-toxic cloud is carried to a small tube placed transversely across the press delivery and as close to the printed sheet as the design of the delivery mechanism will permit. The powder spray is uniformly ejected through small ports in the tube, at a pressure of approximately one ounce and is confined to the sheet. It creates no fog or mist; therefore no exhaust or ventilating system is required, the company states. The resultant dry spray is said to provide the answer to the problem of how to overprint on any kind of paper without creating fog, stick or offset and yield a sheet with a sleek, smooth feel having no trace of powder. The spray unit is equipped with one tube; additional tubes are optional. Special powder is obtainable in 25-, 50- and 100-lb. lots.

ELECTRIC STENCIL MACHINE

The Marsh Stencil Machine Co., Belleville, Ill., have introduced a new electric stencil machine which is said to cut stencils in oiled stencil board or plain paperboard with great speed. Powered by a standard $^1/_6$-h.p. motor, it can be plugged into any light socket. Anyone can learn to operate it in a few minutes, the makers claim. It is made in three character sizes—$^1/_2$, $^3/_4$ and 1 in.

PORTABLE LABEL PERFORATOR

Cummins Business Machines Corp., Chicago, announce a new electric label perforator designed specifically for marking labels and wrappers with batch or date code. The low cost of this device, known as the 370, will enable many manufacturers who now use manually operated coders to take advantage of the speed and economy of power-operated perforators, the makers claim. It may be supplied to operate on insertion of items to be perforated, to trip with a foot switch, or to trip automatically at a specified number of cycles per minute. The change from one method of operation to another can be made in a few minutes.

PRESS UNIT REMOVES INK SOLVENTS

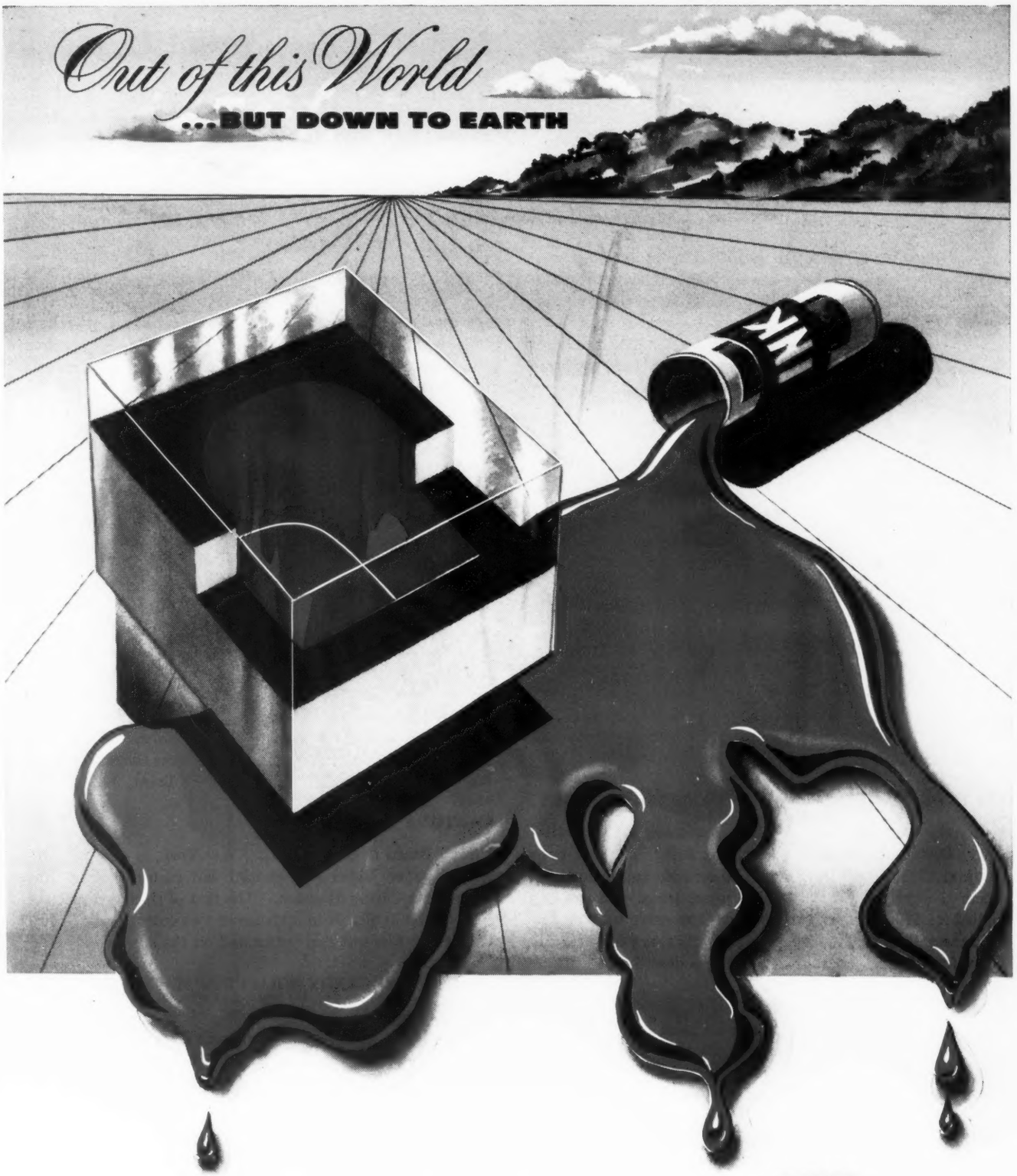
Crawford Engineering Co., Troy, N. Y., announces the development of a high-speed rotary web press equipped with a new unit designed to eliminate problems previously encountered in the food package-making field. This unit is said to dehydrate residual solvents from a special-formula fluid ink and thus, it is claimed, removes the possibility of rancidity when the inked package is subjected to refrigeration. The original brilliance and luster of the pigment colors are retained, it is said, while still permitting the ample use of ink for display and advertising purposes.

COLOR EFFECTS ON ACRYLIC

Anthony D. Calabro, Upper Darby, Pa., announces the development of a special lacquer said to produce unusual color effects on acrylic sheet and also to facilitate the working of the sheet into displays, containers, etc. (See Display Gallery, p. 115, this issue.) The lacquer sprays easily and can also be furnished in a consistency for silk screening. Ac-

Out of this World

...BUT DOWN TO EARTH



Every manufacturer expects his product to travel fast . . . to sales horizons north, south, east and west. To travel fast, a package needs to be well designed but thoroughly **down to earth** — even if an out-of-this-world quality is desired.

That's where WARNERCRAFT steps in . . . with craftsmanship and printing qualities that enable a product to sell on all horizons.

We'd like to tell you more about WARNERCRAFT. Write for our illustrated packaging handbook. It explains how we are equipped to serve you.

W

WARNERCRAFT®

Finest Name in Packaging

THE WARNER BROTHERS COMPANY

Makers of set-up and folding boxes of all types, transparent acetate containers, hand made specialties, counter displays and dispensers.
Main Office and Factory: 325 Lafayette Street, Bridgeport 1, Conn. New York Sales Office: 200 Madison Avenue, New York 16, N.Y.

cording to Mr. Calabro, the lacquer will not craze the surface of acrylic sheeting; it can be engraved afterwards without chipping and it can be formed after it has been sprayed without scratching. Standard or special colors are available.

AUTOMATIC CAN TESTER

A new automatic can tester that detects air leaks and rejects faulty containers immediately was displayed by the E. W. Bliss Co., Detroit, at the Annual Exposition of the Canning Machinery & Supplies Assn., Atlantic City, on Jan. 16 to 21. This machine tests round cans between 2 and $4^1/_4$ in. in diameter and square or rectangular cans up to 7 in. high and between $2^3/_8$ and $4^1/_4$ in. across the corners. No operator is needed. Electric balance beams in the feed chutes, actuated by the weight of the cans, start and stop the machine. Air is pumped into the cans in each of the 18 copper-fitted testing stations by varying pressures, depending on their ultimate use. If there is leakage, "bucket" air pressure rises, the electric contacts are actuated and faulty cans are detected and ejected automatically. The machine is compact and entirely enclosed, requires only 76 by 60 in. of floor space and is 67 in. high.

ELECTRONIC TIMER AND REGISTRATION CONTROLS

The Ripley Co., Middletown, Conn., announces the availability of its electronic timer Model No. 54B. The unit has an adjustable range of from 0.1 to 10 seconds and operation is secured merely by shorting the in-put leads. It can be supplied for 110 V or 220 V, 60 cycles. Extensive tests made by Celanese Plastics Corp. have proved this timer to be satisfactory for their new heat-sealing process described recently in MODERN PACKAGING (Sept., 1947, p. 152).

Another recent development by Ripley Co. is a registration control for use with packaging machines using web-fed wrappers. The control is said to be so highly color-sensitive that correction in the positioning of the wrapping material is possible on such low color contrasts as red or brown on yellow, etc., even though the marks are as fine as 0.015 in. It consists of a scanner and amplifier with built-in relay, with connections provided so that the cam on the feed of the packaging machine automatically corrects the position of the label or wrap whenever the web of material gets out of register. Because of the sensitive circuit, it may be used for scanning opaque and transparent materials, as well as foil. Operation rate is 750 per min., with correction on any sequence of registration marks such as every fifth, tenth, etc.

WATERPROOF PASTE FOR VARNISHED LABELS

Dewey & Almy Chemical Co., Cambridge, Mass., has recently developed a new lap paste for labeling cans and glass jars with varnished labels where the lap end is varnished or very narrow. Extensive tests, the company reports, have shown that this lap-end paste not only develops a strong permanent seal on varnished lap ends, but withstands both cold storage and high humidity hot-room tests without the usual loosening of labels. This adhesive, Darex 3877E, is designed for use in either coil-spring wire or flat rubber-belt machines, enabling these machines to apply the label, it is stated, without modification and preventing the usual wrinkling or staining. Copies of test results are available from the company's Adhesives and Coatings Division.

NEW RESINS AVAILABLE

Hercules Powder Co., Wilmington, Del., has announced the commercial availability of two resinous materials—one specifically designed for use in printing inks and the other said to afford added internal and surface strength to paperboard and added resistance to penetration of oils and waxes in paperboard. The first, called Pentalyn 802-A Pale, is a phenolic-modified pentaerythrital ester of rosin which enables production of overprint varnishes of improved initial color and reduced after-yellowing, the company reports, and imparts better color in printing inks. It is said to impart a higher viscosity to linseed and China-wood oil overprint and gloss-ink vehicles, without sacrificing varnish stability or pigment reactivity.

Hercules CMC, sodium carboxymethyl cellulose, was first introduced to industry in November, 1946, and paperboard manufacturers have been working with it since, according to information released by the company's Paper Makers Chemical Dept. A free-flowing, white, granular powder, it can be added at the calendar stack or size press and may be used separately or in conjunction with conventional surface-treating materials such as starch, wax and wax-resin emulsions.

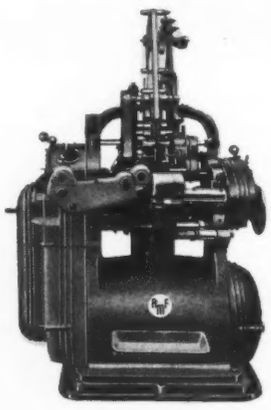
E. I. du Pont de Nemours & Co. also manufactures sodium carboxmethyl cellulose and announces that it is expanding production facilities at its Carney's Point, N. J., plant.

CARTONS FOR JOBBERS

United Board & Carton Corp., New York, is offering a new line of paper jobbers' specialties and cartons to the trade through its Carton Division. The first of these is a new popcorn carton available in a choice of two colors—either red or blue—with tear-out flap perforated on the side panel.

HIGH-SPEED CANDY-WRAPPING MACHINE

American Machine & Foundry Co., New York, sales agents for Rose Bros. candy-wrapping machines made in England, announce the addition of a new high-speed machine for candy wrapping known as the AMF Rose, F.W.R. Fold Wrap Twisting Machine. With its interchangeable features and simple change-over parts, this machine really takes the place of two types of machines. It fold wraps with seam and ends on the underside of the piece at a rate of 500 pieces per min., or twist wraps with neat fantail ends at a speed of 650 pieces per min. Different-sized pieces can be wrapped on the same



"SMART PACKAGING IS SMART SELLING"

MR. CELLOPHANE

HERE'S A SIMPLE SOLUTION to the need for product visibility in selling frozen foods. The die-cut box makes an appetizing display. The easily heat-sealed Sylvania Cellophane overwrap gives maximum protection . . . its excellent printing surface makes possible unusual design.

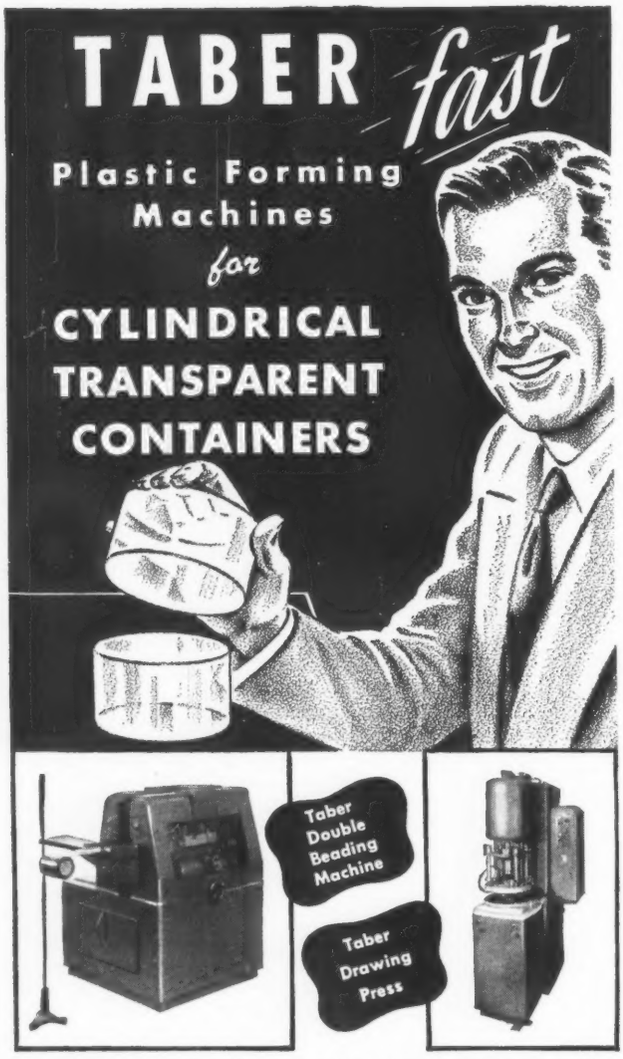
Sylvania Cellophane has all the qualities to keep frozen foods protected. Every step in its manufacture is constantly checked. This careful control assures not only low temperature durability and the uniform strength that stands up under high speed wrapping operation but the high degree of moisture vapor protection that keeps frozen foods from drying out.

SYLVANIA CELLOPHANE

SYLVANIA DIVISION AMERICAN VISCOSE CORPORATION

Manufacturers of cellophane and other cellulose products since 1929

General Sales Office: 350 Fifth Avenue, New York 1, N. Y. *Plant:* Fredericksburg, Va.



Profitable production of cylindrical containers calls for the professional quality and speed obtained with Taber equipment.

For seamless cylindrical containers and covers you will need Taber drawing presses.

For beaded lap-joint cylinders the Taber Thermobeader or Cylinder Beader will meet your needs.

These machines are operated with clean electric heat automatically controlled.

They will step up your production — your quality.

Write for new literature describing and illustrating Taber machines for forming cylindrical and rectangular containers.

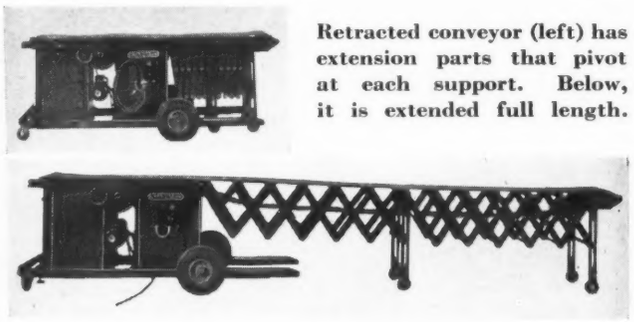
Taber
INSTRUMENT CORPORATION
119 GOUNDRY STREET NORTH TONAWANDA, N. Y.

Equipment and Materials
(Continued)

machine. Its features include: V-belt drive, fully continuous material and paper feeds, paper cut by high-speed rotary knife, heat-sealing device and tachometer. Wax paper, cellophane and wax-backed foil may be used.

NEW TYPE PORTABLE CONVEYOR

The "Extend-O-Veyor," a new type of portable belt conveyor made by Standard Conveyor Co., North St. Paul, Minn., can be moved to any part of a plant or warehouse and will convey cartons, cases or bags any horizontal distance up to

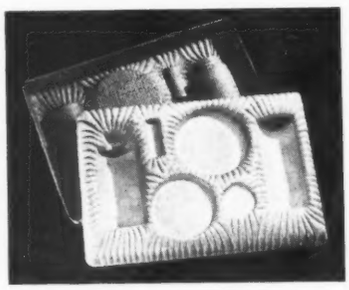


Retracted conveyor (left) has extension parts that pivot at each support. Below, it is extended full length.

46 ft. in either direction. It can be extended or retracted, as the conveying problem requires, to move commodities through confined areas or aisles to any distance between its maximum and minimum or closed length. Since the conveying means is a traveling belt, it can be put into immediate action without adjusting slope or coupling sections together.

MOLDED FABRIC PLATFORM

Creative Moulded Products Co., New York, is offering a molded-fabric platform which may be used in boxes made of any material. It is made of resin-impregnated jute laminated to rayon fabric, which is then molded under heat and pressure. These platforms, now being used by a well known West Coast cosmetics manufacturer in molded plastic boxes, add a luxurious note to the containers. While light in weight, they may be used to good advantage in boxes for delicate instruments because the apertures act as cushions for the items packaged, thus cutting down breakage, the manufacturer states. These platforms are said to be fairly inexpensive, since the molds are made of cast aluminum.



PRODUCTION RESUMED ON TABLE GUMMER

New Jersey Machine Corp., Hoboken, N. J., announces resumption of full production on the Model 1337 table gummer. This machine, a label paste and bench gluer, is used to apply adhesive to labels as they are fed through glue rollers preparatory to applying the label by hand. It has been used to good advantage for small-run lots and is made in several widths. It utilizes the twin-roller method for positive glue control, which is said to be definitely achieved by micro adjustment.

Sparkling Impact

...AT NO EXTRA COST!

260 "Standard Sizes" —eight basic shapes —variable lengths to match your present sizes.
STANDARD SIZE DOBECKMUN CELLOPHANE BAGS
BY CONCENTRATING PRODUCTION ON A LIMITED RANGE OF SIZES, WE CAN OFFER THE BUYER
SUPERIOR QUALITY
FASTER SERVICE
LOWER PRICES
Special Features
1 SURFACE PRINTING LIKE THIS SAMPLE IN ONE, TWO OR THREE COLORS.
2 EASY OPENING LIP FOR BETTER SEAL AND EASIER OPENING.
3 LENGTH FLEXIBILITY - - - - - FROM 7" THROUGH 15" IN ½" STEPS.
4 GREATER STRENGTH WITH GLUED SEAMS AND BOTTOMS
5 FACE PRINTING EXTENDING TO BACK EDGE OF PLYS - - WITHOUT ANY EXTRA CHARGE
THE DOBECKMUN COMPANY
CLEVELAND, OHIO
WEST COAST DIVISION • BERKELEY, CALIFORNIA

YOU DO IT THIS WAY

1. Start with savings of up to 15% or more on unprinted bag basis.
2. Eliminate labels and labor with Dobeckmun's attractive printing. This saving about equalizes printing costs and cuts your packaging time.
3. Result—finer appearance, better product visibility... SPARKLING IMPACT AT NO EXTRA COST.

• You'll put new Z-I-P-P into your packages with attractively printed, Dobeckmun "Standard Size" bags of heat-sealing, moisture-proof cellophane or other films.

Scientifically engineered mass production of 260 different sizes permits saving up to 15% or more on unprinted bags. Quality and reliable glued construction conform to recognized Dobeckmun standards. Cost of surface printing, in one, two or three colors, is no more than that for labels and labor. And—you get packages with powerful, smashing IMPACT that creates more sales.

Send for Samples—Let us show you, with samples and estimates, how you can cut costs and increase package effectiveness with "Standard Size" bags. *The Dobeckmun Company, Cleveland 1, Ohio. West Coast Branch, Berkeley 2, California.*

DOBECKMUN

Self-selling packages in processed films and foils

Branches: Boston, Chicago, Cincinnati, Los Angeles, New York, Philadelphia, San Francisco and Seattle. Representatives everywhere.

Plants and People

Standard-Knapp Corp., Portland, Conn., manufacturer of case-sealing, labeling and marking equipment, becomes a subsidiary of **Hartford-Empire Corp.,** Hartford, under a sale arrangement concluded last month. Hartford-Empire has purchased all the outstanding shares of common stock of Standard-Knapp. **Wallace D. Kimball,** chairman of the board of Standard-Knapp, is retiring at his own request. Otherwise, there is no change in the management. **A. E. Rideout** remains as president; **George Ingham** as vice president and general manager; **J. H. Mosley** as vice president in charge of manufacturing, and **Malcolm McFaull** as vice president. Representing Hartford-Empire on the Standard-Knapp board will be **S. F. Wollmar,** president, and **A. E. VanBibber.**

The acquisition broadens Hartford-Empire's line from glassware-producing machinery through unscramblers and rinsers to labeling and casing equipment, so that the company can do a more complete job of supplying glass-packing industries.

J. Wilson McClenaghan has been appointed Foil Division sales manager, **Reynolds Metals Co.,** for the Middle Atlantic region, with headquarters in Philadelphia. Mr. McClenaghan has been with Reynolds for over five years.

McClenaghan

Reynolds Metals Co. has acquired the Gary, Ind., plant of the **Reynolds Research Corp.** and will operate it as the **Plastics Division** of the Reynolds Metals Co.

Thomas S. Duncanson, for a number of years vice president and general manager of the **F. N. Burt Co.,** Division of the **Moore Corp.,** has been advanced to the vice presidency of the parent company. His headquarters are to be at Toronto, but much of his time will be spent in Niagara Falls, N. Y., and other plant locations of the company. **W. C. Milsom,** plant superintendent of the F. N. Burt Co., has been advanced to the post of general manager.

L. S. Beale, secretary of the Wirebound Box Mfrs. Assn., is the new chairman of the **Manufacturing Trade Group** of the **National Industrial Council,** an affiliate of the **National Assn. of Mfrs.** Mr. Beale succeeds George Romney, manager of the American Automobile Mfrs. Assn.

John W. Birdseye has just been appointed Cargo Sales Manager of **Monarch Air Lines** to assist shippers in the Rocky Mountain region with distribution problems. His special project will be advisory service to shippers of perishables. Mr. Birdseye is experienced in all phases of fresh fruit and vegetable packaging and shipping.

T. F. Slater has been appointed manager of the Rochester sales office of the **Rossotti Lithographing Co., Inc.,** which specializes in food cartons and labels.

Monsanto Chemical Co., St. Louis, announces the appointment of **Edwin L. Hobson** as sales manager of thermoplastic molding materials. Mr. Hobson, formerly assistant branch manager for Monsanto's New York plastics office, replaces **Arnold C. Martinelli,** who resigned. **James P. Skehan** succeeds Mr. Hobson in the New York office.

Monsanto Chemical Co. has recently opened an enlarged office at 445 Park Ave., New York.

The National Merchandising Program of the **Waxed Paper Industry** was recently presented in Chicago to sales managers, promotion managers and advertising managers of waxed-paper manufacturers.

The increased manufacturing area of the South Gate, Calif., plant, makes possible a 25% increase in closure output of the **Pacific Coast Closure Division** of **Anchor Hocking Glass Corp.** When construction at the new factory is fully completed, the management states that manufacturing operations will be virtually doubled.

J. R. Porn, formerly a sales representative, has been appointed sales manager of **Continental Can Co.'s** Des Moines district. Mr. Porn replaces **W. A. Muller,** who has resigned.

International Paper Co. announces the formation of its **Bagpak Division** (heavy-duty, multiwall kraft-paper bags). This was previously handled by two subsidiary companies, George & Sherrard Paper Co. and Bagpak, Inc., which have been dissolved, and by the company's former International Paper Products Division.

Einson-Freeman Co., Inc., lithographers, heads 15 concerns jointly owning or operating the **Wright Aeronautical Corp.** war plant, Fair Lawn, N. J., in the first cooperative "small business" project of its kind.

Marshall Dana, former divisional manufacturing manager for Corning Glass Co., has been named assistant to the executive vice president of **Ball Brothers Co.,** glass container and zinc products manufacturers, Muncie, Ind.

Martin Schnur, industrial designer, announces the opening of new larger studios at 9 Warren St., Newark, N. J. He will continue with package and trademark design, product design and development, etc.

The Rapids-Standard Co., Inc., manufacturers of material-handling equipment, Grand Rapids, Mich., announce the appointment of **Lloyd G. Backart** as sales representative for Washington State and part of Idaho. Mr. Backart was formerly with The Rapids Handling Equipment Co.

Arthur H. Swett has just celebrated his 50th anniversary as president of the **American Tag Co.,** Chicago.

American Machine & Foundry Co., New York, recently contracted with the State Monopolies of the Turkish Republic for the designing and equipping of a factory for the manufacture of Turkish cigarettes.

International Paper Co., New York, recently acquired the corrugated plant and equipment which have been operated by **Owens-Illinois Glass Co.** at Vernon, Los Angeles County, Calif. International will continue the operation

Somebody

should tell her!

She's an attractive product in an outmoded package

Will they tell her, or won't they?

That's up to the ladies.

Will we tell you, or won't we? That's up to Darex* 3 in 1 coating . . . and Darex 3 in 1 tells you to wrap your package in a Darex Coated overwrap and make your package the pride of them all.

Darex 3 in 1 Coating, with its cloud-smooth *cellophanic finish* not only looks like the last word . . . it is the last word in long-lasting water vapor protection and this protection, *heat-sealed* in, will last long after the last word is gone!

And a word to the package-wise is sufficient. Darex Coating is not three, but just one coating. You need no inner liners, just the one wrapper with a 3 in 1 film of Darex Coating embodying these three important functions—*look appeal, protection* and *protection-permanency.*

Use dapper Darex 3 in 1 . . . for that well-dressed package look.

adhesives and coatings division

Dewey and Almy Chemical Co.

Cambridge 40, Massachusetts

*T. M. REG. U. S. PAT. OFF.

Plants and People
(Continued)

of this property for the production of corrugated products and will supply the full requirements of Owens-Illinois' glass-container plant at Vernon, Calif.

Lynch Corp. announces the expansion of the **Sales Department** of the **Package Machinery Div.,** Toledo, Ohio. **M. V. Girkins** was appointed director of sales; **T. C. Werbe, Jr.,** sales manager; **M. J. Czarniecki,** resident West Coast sales engineer, and **W. E. Girkins,** resident East Coast sales engineer. This sales and service staff will handle the distribution of all Morpac packaging machines and Wrap-O-Matic wrapping machines.

T. C. Werbe, Jr. *M. V. Girkins*

Samuel P. Cohn has joined **Fleishhacker Paper Box Co.,** San Francisco, to head its new **Handy Lok Division** which will be exclusive manufacturer and distributor of Handy Lok clothing boxes in 11 Western States.

L. T. Swallow & Associates, Detroit, Mich., have been appointed sales representatives in the state of Michigan and Toledo, Ohio, for **Celluplastic Corp.** of Newark, N. J., producer of plastic containers.

Arthur C. Krogh is now the Pacific Coast district sales representative of **The Sperry Corp., E. G. Staude Division,** with headquarters at 540 Oberlin St., Palo Alto, Calif. Mr. Krogh will handle sales and service for the Sperry-built Staude paper-boxmaking and envelope machinery and equipment.

Trevor R. Gautier, secretary, director and manager of **Nashua Package Sealing Co., Inc.,** and a director of **Nashua Gummed & Coated Paper Co.** of Nashua, N. H., retired at the end of the year under the company retirement plan, after more than 26 years of service. **George A. Coffin,** sales manager and a director of the Sealing Co., continues in these capacities.

Sindar Corp., 330 W. 42nd St., New York, has been formed to take over the activities of the **Industrial Products Division** of **Givaudan-Delawanna, Inc.** Sindar will manufacture and sell industrial aromatics, antiseptics, germicides, mildewcides, preservatives, stabilizers and other products.

Sylvania Division, American Viscose Corp. has just moved its general sales office from the Chanin Bldg., 122 E. 42nd St., New York, to the Empire State Bldg., 350 Fifth Ave., New York.

J. L. Loughran and **Robert J. Schebler** have joined the Philadelphia offices of **Sylvania Division, American Viscose Corp.,** as salesmen.

J. C. Bruce, formerly sales manager of **Modern Packages, Inc.,** has been appointed manager of the Memphis plant of **American Coating Mills,** Division of **Owens-Illinois Glass Co.**

Roger C. Dickey, contributor to *Modern Packaging Encyclopedia* and formerly with **International Paper Box Machine Co.** as advertising manager, also with the **E. G. Staude Division** of the **Sperry Corp.** in the same capacity, has opened his own advertising agency in Nashua, N. H. Mr. Dickey plans to specialize in the graphic arts and paper-converting fields.

The **Western Division** of **Monsanto Chemical Co.** plans to install a small plant at Decatur, Ill., moving to Decatur a portion of the company's Portsmouth, Va., operation which manufactures glues and adhesives.

National Adhesives presented a special course in labeling operations before packaging and purchasing department personnel of **McKesson & Robbins, Inc.,** Bridgeport, Conn. Principal speakers were **Fred W. Bradley,** manager of the New England Division, and **William Sederlund,** technical service manager. The course included care and maintenance of labeling machines, container selection, label specifications, nature of glues and their storage and handling, as well as the many factors which prevent the hazards of poor labeling. Periodic refresher courses will be conducted.

J. Heath Braselmann recently joined the sales force of **Cans, Inc.,** Chicago. Mr. Braselmann has been associated with Liberty Can Co., Lancaster, Pa., for 25 years.

Dr. L. E. Clifcorn, director of product and process research at **Continental Can Co., Inc.,** is now chairman of the Exposition Committee for the **1948 National Chemical Exposition.**

T. N. Barksdale, formerly in charge of **Bemis Bro. Bag Co.'s** Baltimore sales office, has assumed new sales responsibilities at the Bemis Memphis sales division.

Frazier & Son, Belleville, N. J., manufacturers of the Whiz-Packer filling machinery, have moved their entire plant to larger quarters at 338 Cortlandt St., Belleville 9, N. J.

The entire sales force of the **Gummed Products Co.** attended a recent sales meeting in New York. The group were guests of **Better Packages, Inc.,** at a dinner meeting at the New York Athletic Club.

Arthur C. Dreshfield, chemical engineering consultant, has announced the formation of a partnership with **Dr. Cleveland B. Hollabaugh.** The firm will be known as **Hollabaugh & Dreshfield,** with offices at 112–27 177th St., St. Albans, N. Y., and at 401 W. Elm Ave., LaGrange, Ill., and will specialize in stock preparation, sizing, coating, saturating and laminating.

Ray Perin, of the **Ira G. Perin Co.,** has been elected president of the **Materials Handling Assn. of Northern California.**

In recognition of **Food Machinery Corp.'s** outstanding wartime production of LVT's, the Navy has awarded **Paul L. Davies,** president of the corporation, the Certificate of Merit.

Maynard G. Fessenden, head of **Ace Carton Co.,** Chicago, has been elected president of the Western Golf Assn.

Thatcher Glass Mfg. Co., Inc., Elmira, N. Y., announces the following personnel changes: **Robert M. DeGarmo** as assistant to **Raymond K. Boeckman,** vice president in charge of plant operations, on special assignments; **Joseph W. Donnelly** as assistant to production manager **Reginald Burd; Alan Palmer** in charge of the batch storage and mix-

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If you want to learn more about this packaging material, the Kodapak Demonstration Laboratory in Rochester is available to demonstrate fabrication possibilities and practical end uses.

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... the protection you *need*...

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when it's in a wooden chest, box or display case by ROCK. Boxes by ROCK are beautifully designed, sturdily built. Specializing in the design and manufacture of silverware chests, jewelry and display cases for many years has made our name synonymous with fine wood containers.

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"From Standing Timber to Finished Product"

Plants and People
(Continued)

ing department, melting department and producer department, assisted by **Ralph Davis** in charge of the melting and producer departments and **Ralph Denmark** in charge of the batch storage and mixing departments.

N. P. Singleton has been named manager of sales for cast and calendered film, coated paper and packaging materials in the recently created **Plastic Materials Sales Division** of **The B. F. Goodrich Co.** **E. L. Byan** is now manager of sales for coated fabric and calendered sheet, coated wire products and Playponds. **William M. Caston** is manager of distributors' sales and **R. L. Hill** manager of sales for extruded and molded products.

N. P. Singleton

Kimberly-Clark Corp. have celebrated their 75th anniversary by a special edition of their publication *Cooperation*, tracing Kimberly-Clark's growth and progress through the past three-quarters of a century.

Operations were suspended effective Nov. 25, 1947, in the **Glenmar Farms** plant for the processing and pre-packaging of fresh vegetables at Chestertown, Md., according to an announcement by **Glenn L. Martin,** owner of Glenmar Farms. Arrangements are being made to dispose of the plant and its produce-cleaning and packaging equipment.

Lippincott & Margulies, Inc., will be the new name of the firm formerly known as **J. Gordon Lippincott & Co., Inc.,** New York industrial designers. Senior officers of the firm are **Walter P. Margulies** and **J. Gordon Lippincott,** with **Norman A. Schoelles** as vice president in charge of packaging. Main offices will continue at 500 Fifth Ave.

Paramount Paper Products Co., manufacturers of specialty paper bags, announce the appointment of **Lewis Silvers** as their New England territorial manager. His headquarters will be in Boston and his territory covers Massachusetts, Connecticut, Rhode Island, New Hampshire and Maine. **John C. Alden** has resigned as sales manager for Paramount to return to the paper-cup field.

Crawford Engineering, Inc., specializing in package-making and paper-converting machinery, announces the consolidation of its engineering and business offices in the Burdett Bldg., Troy, N. Y. The firm will continue to maintain its Syracuse offices and Providence factory.

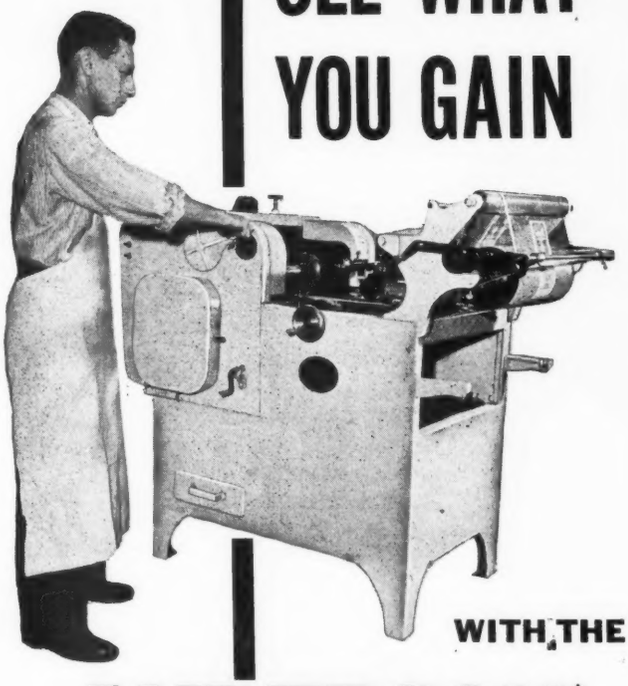
I. M. Bernstein, who recently resigned as director of The National Printing Ink Research Institute at Lehigh University, has joined **Gotham Ink & Color Co.,** Long Island City, N. Y., rotogravure and aniline-ink specialists. He will have charge of research and production for the firm.

J. T. Backus, special assistant to the director of sales of **The Champion Paper & Fibre Co.,** died Dec. 5 after a short illness. He had been with Champion for 20 years.

Charles J. Beck, president and general manager of **Charles Beck Machine Corp.,** died Nov. 1. His nephew, **Carl A. Beck,** succeeds him.

Joseph J. Gossner, manager of the Foreign Department of **Pneumatic Scale Corp., Ltd.,** for the past 25 years died on Oct. 21st.

SEE WHAT YOU GAIN



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In COMPACTNESS

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As fast as 10,000 bags per hour... or as slow as 3,600 when slower operation is necessary for perfect sealing.

1. Can be adjusted to make bags ranging in size from 1½" x 2" to 10½" x 30".
2. Has more easy-to-make adjustments than any other similar machine on the market.

Users report that changing rolls never takes more than 5 minutes; that changing bag sizes takes no more than 10!

It's only 26 inches by 42 inches over-all.

Makes flat, square or duplex bags.

Only $1,965, F.O.B. Dallas.

All machines sold subject to 5-day trial in your own plant anywhere in the U. S.

DIRECT FACTORY REPRESENTATION FOR SALES AND INSTALLATION.

For complete description of the amazing ANDERSON CELLOPHANE BAG MACHINE write today for your copy of Bulletin P1.

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Top off YOUR BOTTLE OR JAR *with a* RICHFORD METAL CLOSURE

Any Size *Plain or Embossed* *Any Shape*

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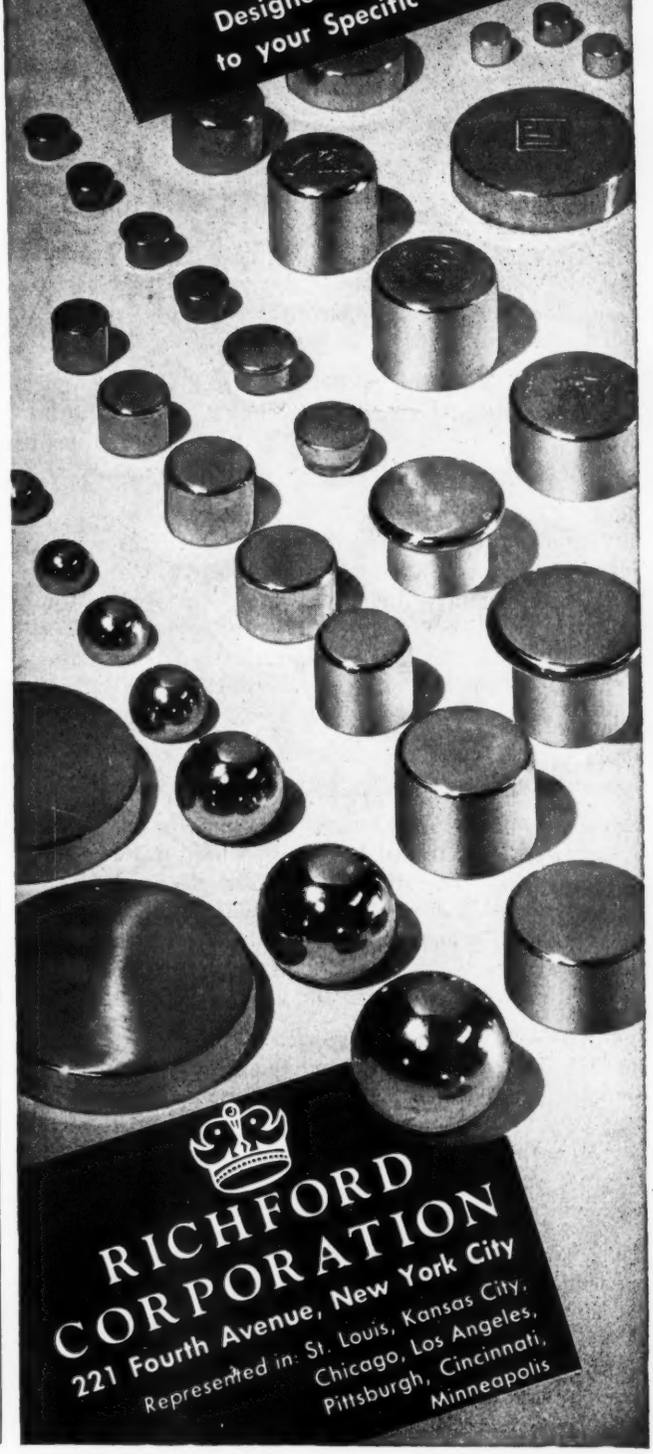

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For Your Information

Vice Admiral George F. Hussey, Jr., USN (Ret.), wartime chief of the Navy's Bureau of Ordnance, recently became the head of the **American Standards Assn.** Admiral Hussey will direct the cooperative efforts of industry, consumers and government in the vital problem of standardization. **Cyril Ainsworth,** formerly in charge of the technical activities of the ASA, will serve with Admiral Hussey as director of operations of the ASA staff. Admiral Hussey succeeds **Dr. P. G. Agnew,** who will continue as consultant to ASA.

G. F. Hussey Jr.

The International Staple & Machine Co., Havertown, Pa., has available an illustrated catalog, "International Stapling Machines Featuring the Retractable Anvil," which also gives information on all International portable and stationary stapling machines. Enclosed with the catalog is a separate reprint "New Layout Returned First Cost in Three Months," showing an installation in operation.

Syntron Co., Homer City, Pa., has issued a new 92-page illustrated catalog describing its complete line of vibratory material-handling equipment and construction and maintenance tools, available upon request to the company.

Robert Gair Co., Inc., has put out a booklet by **J. D. Malcolmson,** director of products development, on "Sealing of Corrugated and Solid Fibre Containers." This is the third edition and it is in entirely new format. It describes in detail sealing with adhesives, gummed-paper tape, staples and stitches, and metal strapping. Copies are available from the firm, 155 E. 44th St., New York.

Standard Conveyor Co., North St. Paul, Minn., has recently issued Bulletin No. 61 describing nine types of standardized units. Copies are available on request.

A new data book entitled "The Plastics Industry—What It Buys and How to Sell It" has just been published by *Modern Plastics* magazine. It defines plastics and the various groups that make up the plastics industry and shows graphically how the plastics industry has grown and how the raw-materials production is divided. This book is available to manufacturers and advertising agencies.

The Wirebound Institute, sponsored by the **Wirebound Box Mfrs. Assn.,** has completed the initial phase of disseminating technical training to the personnel of member companies. The course requires the registrants to complete by mail three series of 10 lessons each on design, performance and quality control of wirebound boxes. One-day clinics are planned after each five lessons.

The special number of *Publicité et Arts Graphique,* devoted to packaging and window display, arrived in the United States recently. This elegantly printed review of graphic art in Switzerland is a treasure trove of some 200 pages of beautifully illustrated documentary information on labels, boxes, plastic, aluminum and transparent packaging, design trends, frozen-food packaging and legal aspects of packaging by leading authorities in Switzerland. The book is published in French with collateral English text. The publication is distributed in the United States by Studio Publications, Inc., 381 Fourth Ave., New York.

Ray E. Hamill, president of **Marvil Package Co.,** Laurel, Del., was elected president of **American Veneer Package Assn.** at its annual convention held in Chicago. The theme of the convention was "Our Customers and How Best to Serve Them." Plans were outlined to expand the program in helping the fruit and vegetable industry with its packing and packaging problems. A school will soon open in Amarillo, Tex., for the training of retailers in the better merchandising of fresh fruits and vegetables under the **United Fresh Fruit & Vegetable Assn.**

Robert S. Solinsky, president of **Cans, Inc.,** Chicago, has been re-elected as president of the **Can Mfrs. Institute** for 1948. **H. Ferris White,** executive vice president, and **Clifford E. Sifton,** secretary and treasurer, were also re-elected for another term.

The National Frozen Food Industry Convention and Exposition will be held at the Stevens Hotel, Chicago, March 15 to 18. Applications for hotel accommodations should be sent to the **National Assn. of Frozen Food Packers,** 1415 K St., N.W., Washington, D. C.

Coburn-Foster Conveyor Co., Inc., 9362 Ewing Ave., Chicago, have issued a pamphlet on their belt conveyors.

Frank Gianninoto, New York industrial designer, gave a talk at the meeting and dinner held by the **American Designers' Institute** on Dec. 3 at the Architectural League of New York. Mr. Gianninoto emphasized that package design is definitely a phase of industrial design, by outlining the steps that a package designer must take to develop a satisfactory package for any product.

In view of the new **Philippine Trademark Law** which became effective in September, 1947, it is important for all trademark owners to bring their Philippine registrations up to date.

A detailed folder on the new A-B-C automatic side sealer has just been completed by **A-B-C Packaging Machine Corp.,** Moberly, Mo., and may be secured by writing them. The machine seals both ends of long, narrow, top-heavy cases.

What's doing

Jan. 13–17—National Food Brokers Assn., Public Auditorium, Atlantic City.
Jan. 16–17—National Pickle Packers Assn., Roosevelt Hotel, New York.
Jan. 16–23—National Canners Assn., Atlantic City.
Jan. 29–30—Wirebound Box Mfrs. Assn., annual meeting, Hollywood Roosevelt Hotel, Hollywood, Calif.

A PICTURE THAT TELLS A STORY OF EXPERIENCE and VERSATILITY

Over ninety different machines—designed, manufactured, installed and serviced by PNEUMATIC—contribute to the packaging and bottling of the famed group of products above. Here, in an almost endless variety of sizes, shapes and types of containers, are represented most of what is modern and up-to-date in packaging and bottling. The multiplicity of problems encountered in producing these containers have been met and successfully solved by PNEUMATIC. The experience gained is a very real and important part of what, not only PNEUMATIC equipment, but also PNEUMATIC as an organization, has to offer you. PNEUMATIC SCALE CORPORATION, LTD., 82 Newport Avenue, No. Quincy 71, Massachusetts. Branch offices in New York, N.Y.; Chicago, Illinois; San Francisco, California; Los Angeles, California.

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Over ninety different machines for the packaging of dry, free-flowing products and the cleaning, filling, capping and labeling of containers for liquids and semi-liquids

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EMBOSSES TRADE-MARK OR NAME RIGHT IN THE SEAL

Lend prestige to your package . . . individualize your product! No extra time . . . no extra labor . . . no extra material required. Name or trade mark can be embossed while bag is heat sealed in one simple operation! One of many exclusive features available with Heat Seal-It Equipment.

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I.P.E.A.A.

The Industrial Packaging Engineers Assn. of America, Chicago, announces the election of the following new officers of the national association: R. F. Weber of International Harvester Co., chairman of the board; P. O. Vogt, General Electric Co., president; J. H. Singer, Rathborne Hair & Ridgway Co., vice president; R. C. Sell, Koehring Co., vice president; A. H. Dobler, Yale & Towne Mfg. Co., vice president; J. L. Ware, Sears Roebuck & Co., treasurer; Stanley Price, Western Electric Co., secretary. The new officers will serve for the next two years.

The three newly elected vice presidents are all former members of I.P.E.A.A.'s board of directors and their election marks the establishment of three divisions within the national association: Mr. Sell is vice president of transportation; Mr. Singer is vice president of packaging; Mr. Dobler is vice president of materials handling.

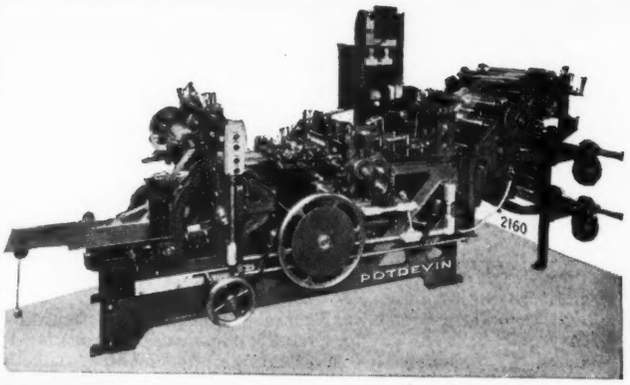
One of the duties of the newly elected officers at their first meeting in Chicago recently was the appointment of I.P.E.A.A.'s directorate for the year 1947-1948. These new directors are: H. C. Bristoll, The Stanley Works; A. L. Green, Assn. of American Railroads; Maxwell A. Goodwin, Clark Equipment Co.; A. C. McGeath, American Box Board Co.; H. W. Newton, American Paper Co.; R. A. O'Reilly, Jr., General Motors Corp.; I. J. Stoller, Fibleco Illinois Corp.; S. H. Tompkins, Crescent Paper Co.; M. C. Weisenhorn, Jiffy Mfg. Co.; J. G. Witte, Montgomery Ward & Co.

During the past month the three local divisions of I.P.E.A.A. also elected officers. Earl B. Candell of General Electric Co. was elected president of the Northeastern Ohio Division in Cleveland, Ohio. A. H. Anderson of Perfex Corp. is now president of the Wisconsin Division in Milwaukee, Wis. Tom D. Shields, Jr., Sunnen Products Co., has been elected president of the Missouri Division in St. Louis, Mo.

The Third Annual Industrial Packaging and Materials Handling Exposition, sponsored and produced by I.P.E.A.A., will be held at Chicago from Oct. 5 through 7, according to an announcement by A. C. McGeath, who has been re-appointed as general chairman. Site for the exposition will again be the Hotel Sherman. Arrangements have been made to provide more exhibit space than was available last year and it is anticipated that some 10,000 persons will attend the Exposition. Chairman McGeath has appointed Maxwell A. Goodwin, as vice chairman of the Materials Handling Section of the Exposition, and J. H. Singer as vice chairman of the Packaging Section.

The Protective Packaging Contest, held for the first time at I.P.E.A.A.'s last Exposition, has been expanded and will feature awards in various classifications of protective packaging. In addition, it is contemplated that a Materials Handling Award will be inaugurated. The Forum will again be repeated.

Further information regarding the Third Annual Exposition may be had by writing to the Industrial Packaging Engineers Assn., 20 W. Jackson Blvd., Chicago.



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The POTDEVIN Model 110L produces flat & square cellophane bags from 2¼ x 6⅛ to 9¾ x 13. The larger Model 111C produces cellophane bags from 3 x 6½ to 10½ x 16¼.

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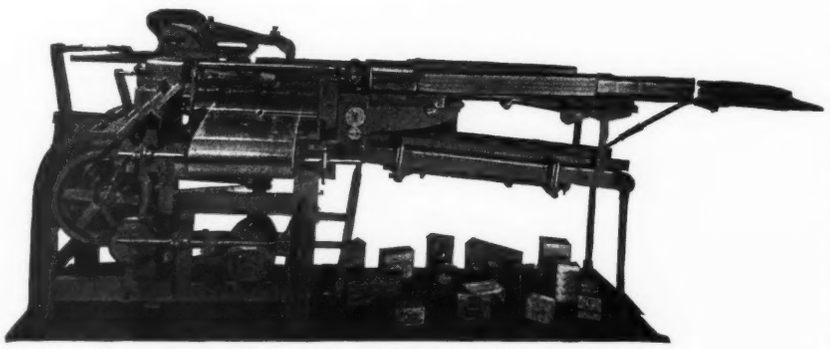
In a market which is becoming more and more competitive, package appearance assumes a greater role. To attract the shopper's eye, to impress her through appearance, and to create an urge to purchase, are the things a successful package must do. Whether your overwrap is plain or printed, it assumes an added dignity when placed around the carton by a Hayssen machine. The neat, square-end folds make the package looked dressed-up and well-tailored; in fact, the combination of striking design and Hayssen wrapping is unbeatable. If you are interested in knowing how much good wrapping can add to YOUR package appearance, write the factory today. An outline of your requirements will bring specific recommendations.



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IT PAYS TO WRAP THE HAYSSEN WAY

HAYSSEN ELECTRONIC CONTROLLED **WRAPPING MACHINES**

U.S. Patents Digest

Edited by H. A. Levey

This digest includes each month the more important patents which are of interest to those who are concerned with packaging materials. Copies of patents are available from the U. S. Patent Office, Washington, at 25 cents each in currency, money order or certified check; postage stamps are not accepted.

Bottle-Dispensing Apparatus, A. Carlson, Kansas City, Mo. U. S. 2,429,745, Oct. 28. An article-dispensing apparatus having an article discharge outlet with a series of fixed, vertically extending article compartments open at the bottom and equipped with closure member, dispensing means and driving means for continuously operating dispensing means and provided with positive drive connections to closure member for intermittently actuating the latter in timed relation with the dispensing means.

Receptacle Carrier, S. J. Blackweel, St. Louis, Mo. U. S. 2,429,917, Oct. 28. A receptacle carrier comprising a handle, a base, upwardly slotted extended arms on the base, a plurality of encircling guards and grooves in the guards, arms arranged for inwardward reception of grooves, ends of handle extend through inward grooves, handle being removable from grooves.

Means Facilitating Stacking of Containers, A. G. Liebmann, Washington, D. C. U. S. 2,429,958, Oct. 28. A general shipping container of the knockdown, nesting type, cushion vibration insulating rings mounted upon the periphery of base and outer face of end closure, insulating rings being of resilient material and tread faces provided with annular channels forming suction areas; flange on the cover lies within flange of base portion of a superposed container and in sliding engagement therewith.

Fruit Feeding and Orienting Apparatus, B. C. Coons (to Food Machinery Corp., San Jose, Calif.). U. S. 2,429,991, Nov. 4. A mechanism for feeding unstemmed fruit into a fruit-treating machine stem end up comprising fruit-holding means, means for dropping one fruit at a time toward fruit-holding means, means for receiving dropping fruit and guiding it toward holding means and means for obstructing fall of fruit through guiding means and means for rightening stem of fruit descending therefrom and depositing fruit in rightened position into holding means.

Loading-Bin Attachment for Corn Pickers, C. N. Evans, Jr., Haxtun, Colo. U. S. 2,430,007, Nov. 4. An attachment for corn pickers comprising a frame forming a horizontal triangle and positioned at one side of the picker with means pivotally connecting the adjacent apex of frame to picker for vertical and horizontal movement of frame independently of picker and having wheels supporting outer side of frame for traveling parallel with picker and a bin supported in elevated position on frame for receiving corn from picker.

Method of Producing Can Bodies, N. Geertsen (to American Can Co., New York, N. Y.). U. S. 2,430,010, Nov. 4. A method of producing a reenforced tubular sheet metal can body having spaced reenforcing beads in turn having their opposite ends extending into the side seam to reenforce the seam, insuring proper venting during soldering, beads being bent into hooks, which hooks are interlocked to reenforce side seams.

Tear-Strip Type Container and Reclosure Therefor, I. D. Thornburgh (to American Can Co., New York, N. Y.). U. S. 2,430,035, Nov. 4. An air-tight, sheet-metal container capable of air-tight reclosure, container body with score lines defining a removable tearing strip for opening container, collar located inside body and hermetically sealed at top, extending inwardly at an angle to form a conical wall back of tearing strip, wall terminating in an outer reclosure curl, cover having a primary sealing gasket and an inwardly spaced reclosure gasket channel double-seamed to said container.

Tear-Strip Type Container and Reclosure Therefor, I. D. Thornburgh and F. Goodrich (to American Can Co., New York, N. Y.). U. S. 2,430,036, Nov. 4. In an air-tight, sheet-metal container capable of air-tight reclosure, container body having score lines defining a removable tearing strip for opening, collar being located inside and hermetically sealed thereto and terminating in a friction seat adjacent the top, container cover secured to body and equipped with inner reclosure gasket; resealing after opening being accomplished by reclosure gasket being engaged between collar and cover in its reclosure position after tearing strip has been removed.

Collapsible Tube, C. Dreyfus, New York, N. Y. U. S. 2,430,046, Nov. 4. A collapsible tube having a tubular body portion comprising an organic film-forming material and having attached thereto a strip of brittle material breakable on at least the surfaces thereof at spaced points along length thereof without losing its continuity when tube is rolled upon itself.

Containers of Polyvinyl Acetals, L. L. Leach (to E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.). U. S. 2,430,065 Nov. 4. A container suitable for packaging of coffee, formed essentially of film of partial acetal of polyvinyl alcohol wherein from 12 to 55% of available hydroxyl groups of polyvinyl alcohol have been reacted with an aliphatic aldehyde containing from one to six carbon atoms.

Carrier Handle, S. C. Roberts, Portland, Ore. U. S. 2,430,142, Nov. 4. A carrier handle of bail member having inwardly turned portions at its uppermost end and removably engaged with a handle, opposite end of bail member being turned back on itself for a portion of its length, each leg portion of bail member being made of two aligned parts adjustable and lockably attached to each other.

Bag Holder, K. T. Buttery (to Sutherland Paper Co., Kalamazoo, Mich.). U. S. 2,430,155, Nov. 4. A bag holder formed of an integral blank, comprising side and end walls adapted to receive open end of bag, side walls having bag-clamping and guiding members hingedly connected to their upper edges and depending within walls; spreader members hingedly connected to upper edges and swingable inwardly between clamping members whereby clamping members are swung outwardly to bag.

Box With Sliding Latch, F. Frederics, New York, N. Y. U. S. 2,430,220, Nov. 4. A lower upright receptacle with an upper inverted receptacle, receptacles being positioned in rim-to-rim contact relation to form closed box and hinged to rear wall whereby upper receptacle serves as a swingable cover for lower receptacle; track means carried on front wall adapted to permit up and down slidable movement, locking means housed within track channel to permit locking of box.

Apparatus for Producing Tea, Coffee or Similar Bags, L. B. Eaton and R. W. Vergobbi (to Pneumatic Scale Corp., Ltd., Quincy, Mass.). U. S. 2,430,280, Nov. 4. In a machine the combination bag-forming means including a reciprocal forming member, means for folding a blank of heat-sealable paper about forming member to form a flat bag having but two side walls and two pairs of cooperating heat-sealing rollers spaced apart and disposed to engage and seal marginal edges of side walls of folded bag face to face and keeping the marginal edges separated during sealing operation.

Web Feeding Mechanism, L. B. Eaton and R. W. Vergobbi (to Pneumatic Scale Corp., Quincy, Mass.). U. S. 2,430,281, Nov. 4. A feeding mechanism comprising a pair of intermittently operated feed rolls arranged to advance a predetermined length of a web of bag-forming material and equipped with supporting plate and movable suction head.

Carrier for Bottles and Other Articles, W. A. Ringler (to The Gardner-Richardson Co., Middletown, Ohio). U. S. 2,430,302, Nov. 4. A body blank having a central bottom-wall panel and outlying side-wall panels erectable with respect to bottom panel, a pair of straps pivoted to side wall at points spaced from edges of bottom panel and intermediate to edges of side panels, straps having central portions equivalent in length to width of bottom, which then form end-wall straps.

Bottle Carrier, R. Warner and H. B. Smalley, Bloomington, Ill. U. S. 2,430,415, Nov. 4. A carrier for bottles having transverse sections of minimum diameter with downwardly flaring bottom portions and upwardly flaring portions adjacent thereto which form a tray with horizontal wall portion and vertical wall portions at opposed ends of horizontal wall portion below same, bottles being admitted through opening in vertical portion.

Operator for Pivoted Closures, M. L. Goldbert (to Developers Corp., Boston, Mass.). U. S. 2,430,222, Nov. 4. A casing, vertically arranged wall disposed within casing dividing interior into plurality of compartments, vertically arranged recesses extending axially of wall member; cover for each compartment, plunger mounted on wall with fingers extending downwardly from underside extending into interior of casing, means to restrain plunger against upward movement in response to normal urging of spring means to handle-cover opening.

Receptacle Closure, A. T. Thompson, New Orleans, La. U. S. 2,430,542, Nov. 11. In combination with a receptacle closure disposed on the inner side of a wall of the receptacle over a filling opening, and extension member carried by the closure and extending through filling opening and terminating outside of wall, a means on outside for holding closure in closed position comprising members hinged on outer side with double-link connections be-

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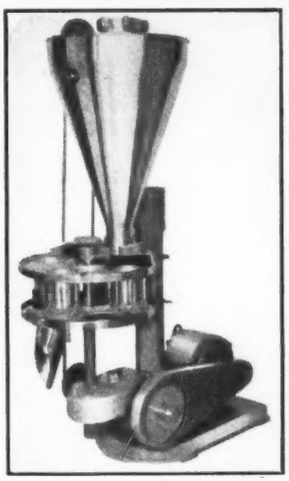

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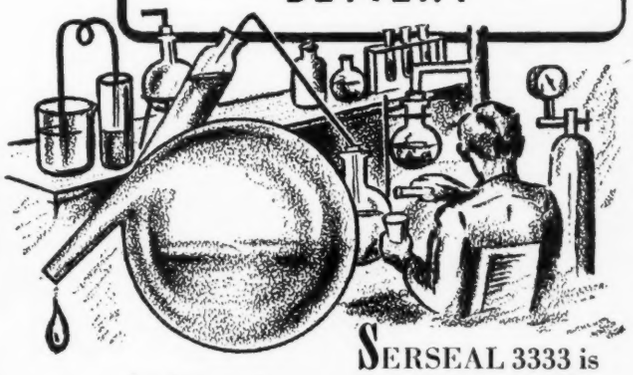

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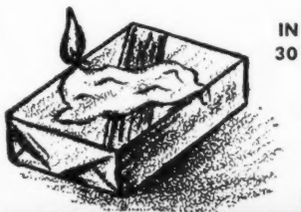

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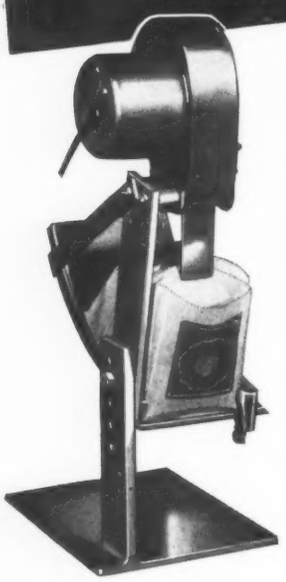

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U.S. Patents Digest
(Continued)

tween hinged members, double-link connections forming means for expanding portions of hinged members into and out of interengagement with extension member carried by closure and maintaining closure in close engagement with inner side of wall.

Display Container, R. Guyer (to Waldorf Paper Products Co., St. Paul, Minn.). U. S. 2,430,609, Nov. 11. A display carton including collapsible, hollow side walls, upper and lower panels connected by inner and outer side-wall panels, inner side-wall panels having apertures therein formed by cutting tongues adjacent to fold line connecting inner side wall to lower panels, a bottom panel encircled by wall sections and resting upon tongues, tongues on bottom panels engaging apertures.

Laminated Sheet Heat-Sealable Container. R. A. Farrell and C. L. Wagner (to Marathon Corp., a corporation of Wisconsin). U. S. 2,430,459, Nov. 11. A laminated container having wall portions formed of a heat-sealable sheet adhered to a relatively dense base-sheet material, an intercalated continuous flexible sheet of thermoplastic film and a thin, relatively porous tissue sheet adhered to film, adhered together by heat and pressure.

Carton, R. Guyer (to Waldorf Paper Products Co., St. Paul, Minn.). U. S. 2,430,610, Nov. 11. A carton blank including a paperboard blank having a thin flexible liner sheet connected thereto, paperboard blank having front and rear walls and bottom panel foldably connected together along parallel transverse fold lines with wall and end flaps foldably connected to bottom, and means for securing liner to projecting flaps.

Weighing Machine, A. Sowden, Arkansas City, Kans. U. S. 2,430,622, Nov. 11. The combination of a weigh hopper, weighing means to support hopper including a movable weight-responsive element and a connection from hopper to weight-responsive element, a means located at a higher elevation than hopper to supply material to hopper by gravity.

Card-Forming Apparatus, O. Sandberg (to Lynch Package Machinery Corp., Toledo, Ohio). U. S. 2,430,620, Nov. 11. In a card-forming apparatus, a hopper for a stack of cards, a trough, means for engaging lowermost card in hopper and moving it into trough, means for engaging rear edge of card to prevent its retraction into hopper and reciprocating plunger to engage card between supports and depress and fold it into channel shape.

Bottle Capper, J. T. Shanahan, Dubuque, Iowa. U. S. 2,430,651, Nov. 11. A bottle-cap replacing device comprising a relatively long body forming a handle and provided at one end with an enlarged circular head, a flange formed at opposite sides of head and extending from handle around head beyond the transverse center of head, a circular body against one side of head and having an encircling groove in which flange is secured, circular body having a recess formed in the end opposite from head to receive a crimp-sealed bottle cap and means effecting the constriction of cap around bottle mouth when member is forcibly driven, with cap therein, onto bottle mouth.

Receptacle with Lid-Operated Lifter, A. Cahn (to United States Playing Card Co., Cincinnati, Ohio). U. S. 2,430,707, Nov. 11. In a receptacle, the combination of an open-topped box, side walls for box, a transversely extending concave portion on upper edge of one side wall, spaced cylindrical knuckles projecting upwardly from side wall, a lid for box having a transversely extending concave portion on one side, cylindrical knuckles extending from lid side and disposed in axial alignment with knuckles on box, a hinged pintle passing through knuckles, a raising arm freely pivoted on pintle and a cylindrical portion snugly disposed between knuckles on box and in rotatable contact with concave portions on box.

Textile Cone, C. K. Dunlap (to Sonoco Products Co., a corporation of South Carolina). U. S. 2,430,710, Nov. 11. A textile cone adapted to serve as a supporting core for a yarn package wound thereon, comprising a paper body having a winding surface conditioned with discrete, extending fibres to secure the inner windings of yarn package against slippage on paper body during winding and subsequent use of yarn package.

Method of Making Collapsed Boxes, S. Bergstein, Cincinnati, Ohio (to R. M. Bergstein and F. D. Bergstein, trustees). U. S. 2,430,755, Nov. 11. The method of making one-piece, knocked-down boxes from blanks having four main body walls, each end wall having a medial fold line therein, bottom wall having inner flaps, medial line of fold in bottom and inner flaps, front wall having glue flaps articulated to ends thereof, applying adhesive to triangular portions of inner flaps defined by diagonal lines of fold, it is folded reversely along the medial line of bottom wall and by

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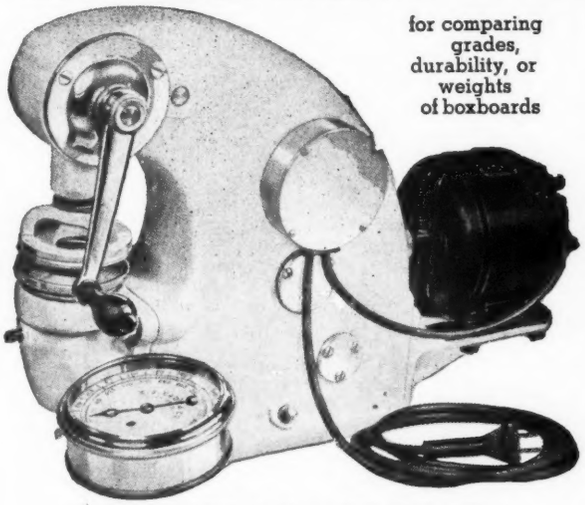

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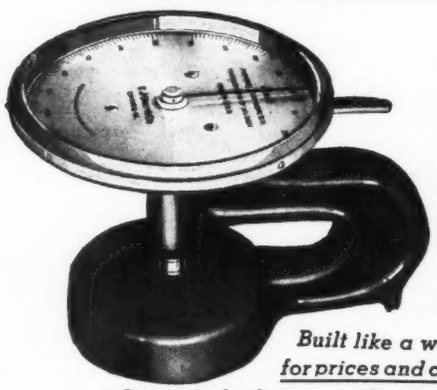

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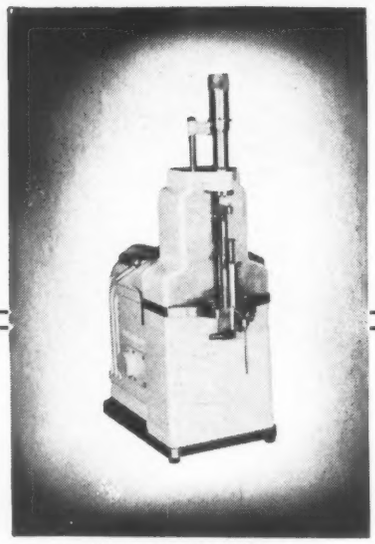

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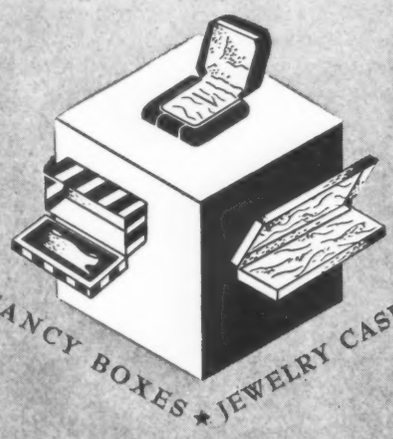

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U.S. Patents Digest
(Continued)

folding inwardly along lines of articulation between bottom and rear wall and bottom and front wall, adhesively securing triangular portions of inner flaps to end walls and glue flaps.

Winding Machine, G. W. Thelin, Wellesley, Mass. U. S. 2,430,746, Nov. 11. A winding machine comprising two rotor assemblies, rotors of which are adapted to rotate in opposite directions, means to cause rotors to so rotate, rotors each embodying instrumentalities to hold a supply of wire, a movable carriage supporting rotor assemblies, supporting means for carriage and holding means supported by supporting means adapted to hold a core to wind wire.

Nonrefillable Bottle Closure, T. J. Taheny, Pawtucket, R. I. U. S. 2,430,790, Nov. 11. A nonrefillable bottle comprising a cylindrical cap with a dispensing opening, a collar surrounding said opening, a cap on collar, interior wall of cap enlarged to form an annular seat, a guard mounted on seat and having openings through which fluid freely passes a ball underlying guard and engagable with guard, frustro-conical cavity formed in guard to receive ball, a cylindrical sleeve mounted against guard and containing an opening for dispensing bottle contents.

Case Packer, W. D. Kimball (to Standard Knapp Corp., Portland, Conn.). U. S. 2,430,878, Nov. 18. A machine equipped with a case support, a carrier adapted to advance a plurality of cases along the support successively to a packing position, reciprocating packing mechanism at said packing position adapted to receive successive charges of articles and pack them in the case at the packing position, a control device for advancing mechanism to cause a step advance and means operated by packing mechanism for actuating control device and causing carrier to advance one step.

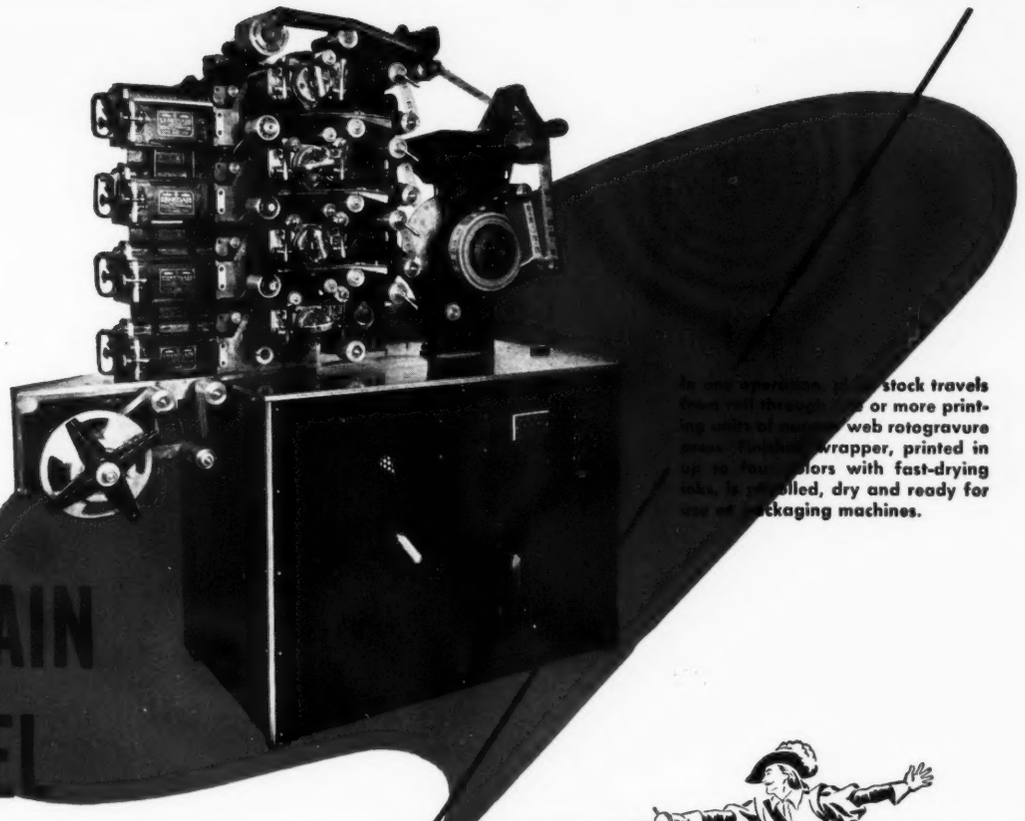
Crashproof Liquid-Confining Receptacle, W. D. Bradley (to United States Rubber Co., New York, N. Y.). U. S. 2,430,905, Nov. 18. An expansible container adapted to hold liquid and withstand increased pressure of liquid on walls thereof when liquid-loaded container is subjected to rapid change of motion, said container comprising flexible walls of extensible corrugations extending completely around container, container being bendable in all directions about an axis encompassed by said corrugations, having elastic and universally flexible means cooperating with walls and bendable with walls for retaining corrugations in retracted position when liquid is in static condition and adapted to permit corrugations to be extended by increased pressure of liquid.

Laminated Fuel Tank. A. Hershberger (to E. I. du Pont de Nemours & Co., Wilmington, Del.). U. S. 2,430,931, Nov. 18. A container adapted for storage or shipment of high octane motor fuels and the like comprised of laminated walls composed of a film of a partial acetal of polyvinyl alcohol combined with an aliphatic aldehyde containing from one to six carbon atoms, a layer of compounded rubber-like vulcanizable butadiene copolymer and a layer of natural gum rubber.

Sealing Cap For Containers, A. B. Walters, Denver, Colo. U. S. 2,430,967, Nov. 18. Means for closing the open end of a container having an outwardly indented circumferential groove positioned parallel to open end, comprising: a capping disk of slightly larger diameter than internal diameter of container, a plurality of radially extending indented scores in outer surface of disk, extending indented scores in the outer surface extending inwardly from the periphery thereof for a relatively short distance; tangentially extending scores connecting inner extremities of radially extending scores, said scores allowing flexing of edge of disk to permit insertion thereof into container to reach groove.

Powder Spray Dispenser, W. L. Rutkowski (to R. C. Can Co., St. Louis, Mo.). U. S. 2,430,081, Nov. 18. In a powder spray dispenser, of a powder container having a dispensing outlet, an air-distributing chamber at inner end of powder container, a valved cylindrical compression member telescopically associated with powder container, an air-inlet valve to control air admission.

Collapsible Bottle Carrier, J. L. Darnell (to The Lockwood Mfg. Co., Cincinnati, Ohio). U. S. 2,430,231, Nov. 18. A collapsible bottle carrier comprising horizontal bottom member, apertured overlying top-plate member, apertures of which are receptive of bottles to be supported upon bottom, means for vertically guiding and limiting movement of top-plate member from a position of substantial flatwise contact upon bottom, to an elevated position in substantial spaced parallelism therewith and means automatically operative to lock and maintain said members in the spaced position last mentioned.



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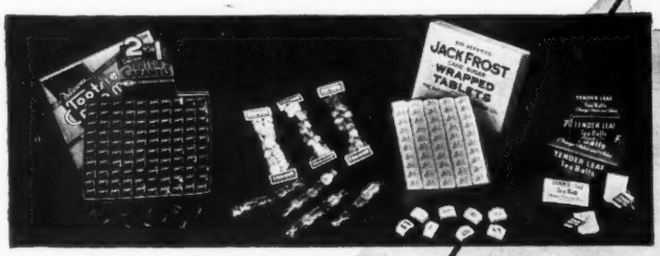

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Outlook for '48

(*Continued from page 80*) of the year, but rose to close to 20% by the end of 1947.

One of the more encouraging aspects of the prospective steel shortage is the immense available capacity of the glass makers. Due to new facilities, the glass industry's capacity is now well in excess of the 120,000,000 gross annually provided at the 1946 peak and a spokesman for the industry has been quoted as saying that at least 15% of present capacity can be considered as excess, if reasonable conservation is practiced, to be available to cushion any can shortage. Maximum conservation probably would entail a return to stock instead of private molds for most volume users and might entail a withdrawal of the one-trip beer bottle, although the glass makers probably would oppose the latter move at present. Neither of these steps would entail any great hardship for users, as long as the glass-packing lines used during the war are still available. The big question would be adequate shipping facilities, since glass takes greater space and weighs more than metal containers.

CLOSURES

Production capacity for both metal and plastic closures appears adequate to meet any possible increase in glass-container use in 1948. Both types of closures slumped during 1947 from their all-time high of 1946. Metal closures dropped from 16,350,000,000 units to 15,900,000,000; plastic, from 2,500,000,000 to 2,257,000,000 units. The drop was much greater than the decline in over-all glass-container production, indicating that a greater proportion of glass during the year was going to carbonated beverage, beer and other types of products not requiring screw or lug-type closures. Production in 1948 will depend entirely on trends to or away from metal containers, the extent of which is impossible to predict now.

CROWN CAPS

Multi-trip bottles called for the use of 42,875,110,900 crown caps during 1946, which was more than double the prewar requirements. At least approximately the same number were used in 1947, with the prospect of an increase for 1948. Although practically all the principal materials except cork are still in short supply, industry men say that supply should balance demand during 1948. At present 30 to 90 days are required for delivery, but this situation is expected to improve. Prices will depend on trends in raw material and labor rates.

CORK STOPPERS

Cork imports are now moving freely, in refreshing contrast to the wartime situation when virtually all of this shipping was at a standstill, and supply is ample to meet any anticipated demand for 1948. Of total imports of 100,000 to 120,000 tons of raw cork wood per year, packaging requires only around 5,000 tons a

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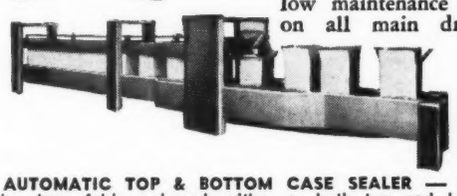
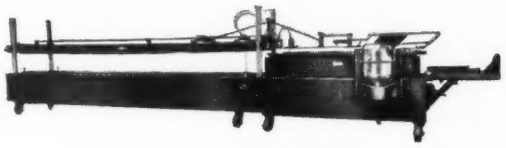
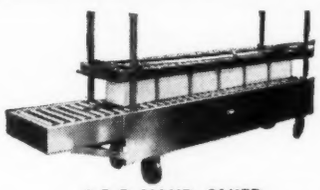


A-B-C AUTOMATIC TOP & BOTTOM CASE SEALER — Automatically glues, folds and seals either or both top and bottom flaps of cases in one operation.

A-B-C AUTOMATIC SIDE SEALER — Automatically glues, folds and seals either or both ends of cases too long and narrow to be accommodated in an upright position.



A-B-C SEMI-AUTOMATIC BOTTOM CASE SEALER — Seals bottom flaps in one operation. Handles empty cases with partitions in place. Speeds up to 15 cases per minute.



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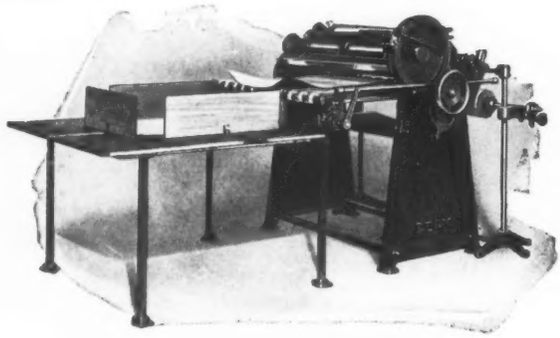

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year. Peak packaging use was reached in 1946, an abnormal year, when production of cork stoppers used 5,400 tons, 50% above the prewar figure. In 1947, consumption declined to a more normal level at 4,140 tons, which is still 18% above prewar. Present production facilities are ample and deliveries of cork stoppers are prompt.

CANS

Having achieved the biggest percentage gain in output of any item in the list of fabricated packages in 1947, capacity of the can-making industry appears adequate to meet any demand in 1948. Number of cans shipped rose from 23,410,000,000 in 1946 to an estimated 27,000,000,000—far above the prewar level of 19,000,000,000.

However, the question for 1948 is not fabricating capacity, but the supply of steel and tin and—as pointed out in the introduction to this report—these key materials are already so deeply involved in both foreign-aid and national stock-piling programs, with so many confusing indications both for and against a continued ample supply for packaging, that 1948 can be entered only as a question mark.

While the prospective tin-use limitation order excluding or limiting use of tin for beer, coffee, pet-food and other "non-essential" product containers would have an immediately noticeable effect on these fields, where the can made its biggest gains in 1947, the overall picture would still not be clear. Growth of the electrolytic tinplating method is steadily lowering the ratio of tin consumption to can production. Many products forced out of cans during the war primarily because of steel rather than tin shortage can use cans with little or no tin content. The National Coffee Assn., for example, is consulting with the Materials Distribution Committee of the Department of Commerce to perfect technical details for utilization of a blackplate coffee container.

On the other hand, the effect of the glass industry's aggressive promotion of one-trip beer bottles and other low-cost, light-weight glass containers must be considered and a prospective 15% increase in can prices this year may have a distinct effect. The American Can Co. has already warned customers to expect a 15% rise in view of schedules for 1948 posted by the steel mills for all types of can-making plate. It is expected that all can makers will pass on this increased base cost. It is a complicated price structure, but in general contracts call for passing along to can customers any changes in labor or plate costs as direct additions to basic can prices, without additional mark-up by the can maker.

The use of cans for beer has jumped from 1,000 tons per month in August 1946, to 24,000 tons per month in August 1947.

The need to conserve tin is obvious and can be considered quite apart from the Marshall Plan. Last June, United States stocks were 45,000 long tons, the lowest since 1940 and comparing with a relatively

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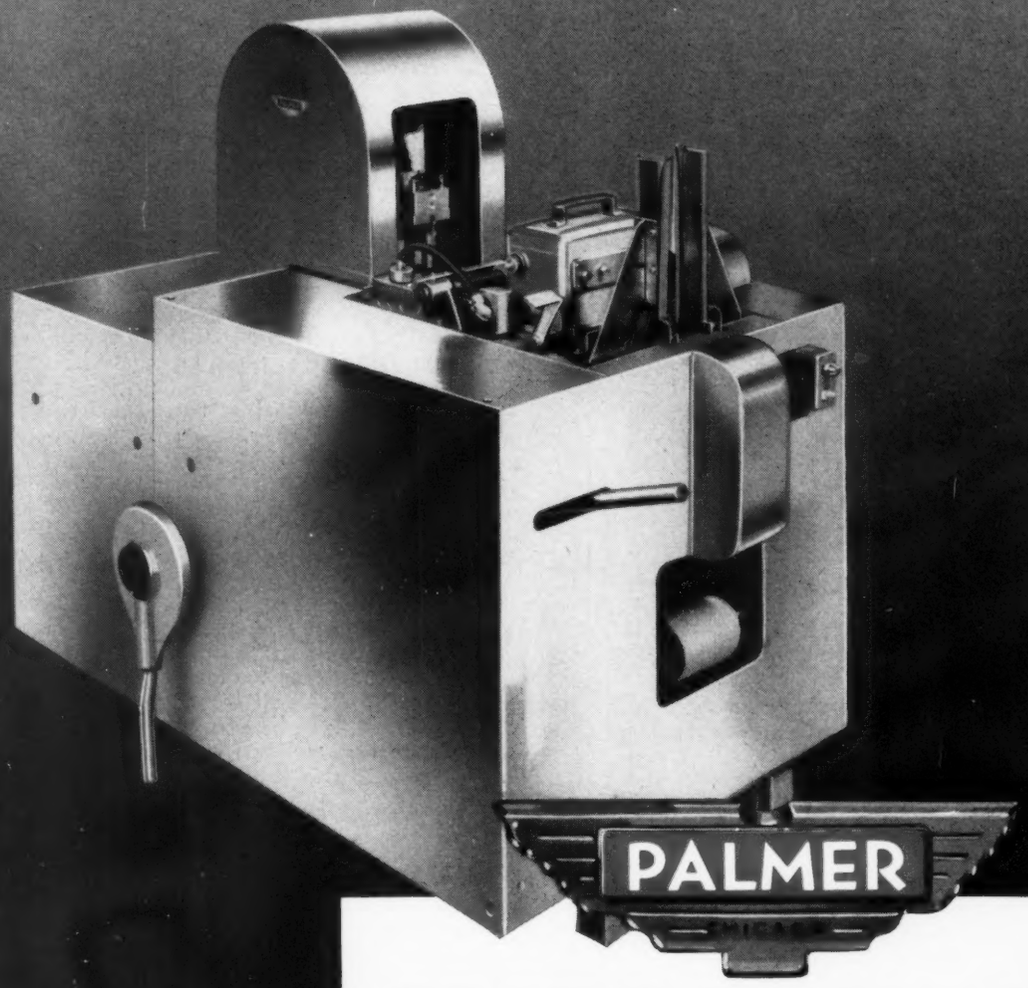

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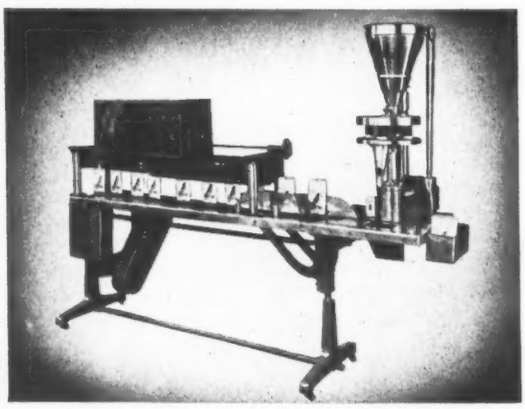

This compact filling and sealing set-up for coffee bags is low in cost, easy to operate. Speeds of 35 to 40 bags per minute with one unskilled operator.

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comfortable figure of 100,706 long tons in the year 1942.

It is considered a certainty that the tinplate basic-control orders (M-43, regulating tin for cans, and M-81, regulating end uses of metal cans) will be extended beyond their present expiration date of Feb. 28, 1948. The contemplated restriction on cans for non-essential products would be issued by Secretary Harriman on his authority under M-81; it would be simply a re-imposition of wartime restrictions under this control that were lifted about a year ago.

COLLAPSIBLE TUBES

Supply has balanced demand since June, 1947. The 1947 total production will show a decrease of nearly one-third, as compared with the high of 1946 (961,200,000 units), and 1948 is expected to decline to the prewar level of something over one-half billion units. Present facilities are adequate and deliveries are being made on a normal basis. The use of tin, important in this industry, is still controlled and allocated by the conservation order M-43.

STEEL DRUMS AND PAILS

This industry faces a continued shortage of steel and there is little expectation that supply will come even close to meeting demand. The 1946 production of all types (which includes heavy and light barrels and drums, kegs and pails) amounted to 86,532,000 units. This increased to 98,700,000 units in 1947. The 1948 figure is entirely contingent upon the availability of sheet steel. The industry has a six months' backlog of orders.

FIBRE DRUMS

The steel shortage and war needs caused a phenomenal increase in use of fibre drums. From a prewar production of 2,142,000 units, the industry grew to a 1947 production of 17,500,000 units, with prospects for the 19,000,000 mark to be reached in 1948. Steel shortage still bothers this industry, needing steel for rims and lids, and scarcity of paperboard has been a limiting factor. Despite the over-all production gain shown for 1947, some plants have operated erratically because of shortage of materials. The industry's capacity is greater than the 1947 production figure. The world situation promises an indefinite continuation of active demand for this industry. Deliveries, however, are generally according to normal schedule now and price levels are likely to remain unchanged unless and until material and labor costs decline—which is not expected during 1948.

FIBRE CANS AND TUBES

This form of package showed a steady increase of use during the war years. According to the Department of Commerce figures, the 1942 production of 165,000 tons had grown to 360,000 tons by 1945. The estimated dollar volume for 1946 shows a 100% gain over prewar years, but this figure must be discounted somewhat to compensate for increased prices; tonnage figures are

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ROUND - OVAL OR SQUARE

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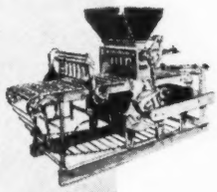

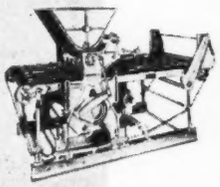

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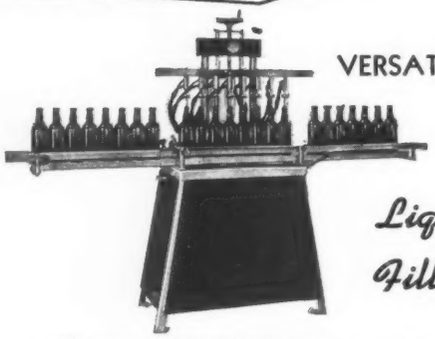

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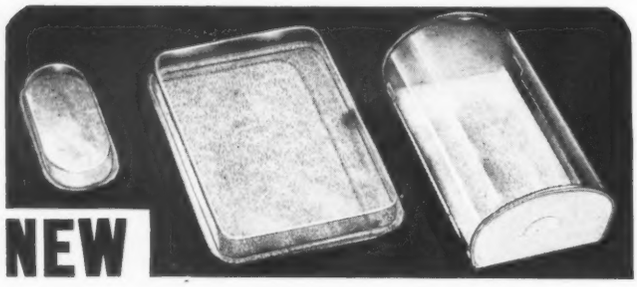

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First of these is SLIDE-VU BOX illustrated by the two exquisite containers at the left, above. Of crystal-clear drawn acetate, SLIDE-VU BOX is available in many sizes and shapes. The cardboard base—in standard colors or special finishes—slides open or shut between strong acetate flanges. When fitted with easel-type base, box makes ideal display container.

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Second new box (shown at far right) is VU-LOCK BOX. It ships *flat*, then quickly locks together to form a luxurious set-up box. VU-LOCK BOX can be obtained in almost any size . . . can be used to package tiny powder-puffs or bulky bedspreads.

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not available for 1946 and 1947. Conservative estimates from the field indicate that 1948 will equal 1947, with fair prospects for supply to balance demand. Facilities are ample for anticipated needs and an occasional shortage of adhesives is the only thing the industry worries about. Deliveries are normal at present and expectations are that the price situation will remain steady. This industry, however, is another one that could be quickly affected by the European situation. As demands for steel increase, many packagers will turn to the fibre can in substitution for the metal can.

TEXTILE BAGS

This industry measures its volume in yards. The prewar production was 1,531,000 yards, which grew to 1,700,000 yards in 1946. 1947 figures, when completed, will probably be back to the prewar level and 1948 is expected to hold about the same. The industry has no fear of being unable to meet demand unless European-shipment requirements are greater than anticipated. The only material problem faced is the adequacy of Indian burlap mill production for world needs. This at present is 30% under prewar levels. The division of the Indian provinces has made it difficult for mills to obtain adequate supply of raw jute, while the political situation has made it difficult to obtain skilled labor. If the Indian Government were to permit an increase in the work week, it might result in a 10 to 12% increase in burlap production. Manufacturing facilities in this country are ample. Current operations reflect buyer resistance to high prices, resulting in hand-to-mouth purchases. However, prospects for price reduction are slim. Cotton-goods prices are influenced by an export of all cotton goods which is five times the prewar level and prices on burlap goods remain firm due to short production. The price situation can only be altered by a lessening of world demand or a vast increase in production of materials.

WOODEN BOXES

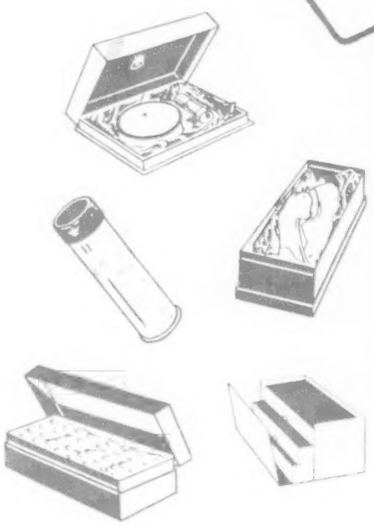
The production curve has fluctuated widely, from a prewar figure of 3,381,000,000 ft. to a wartime high of 15,000,000,000 ft. The 1946 estimate was 5,600,000,000 ft. and for 1947, 5,000,000,000 ft., with a prospect of a further decline of 10% for 1948. Offsetting this possibility, however, is the prospect that the European Recovery Program will lead to a marked increase in boxed and crated exports over the present high volume. The industry faces no serious problems with respect either to raw materials or productive capacity, except that nail supplies have been inadequate. Deliveries are almost up to normal. Present prices, according to industry sources, do not reflect increased costs, so some upward adjustments are possibly in store for 1948.

WIREBOUND BOXES

Use of these containers fluctuates with the fruit and vegetable crops. In 1946, out of a total production of 123,000,000 wirebound containers, 68,000,000 were used

"DON'T SELL THE STEAK SELL THE SIZZLE"

SSSSSSSSSSSSS



That's a favorite bit of advice from Elmer Wheeler, nationally-known salesman and public speaker. And it's good advice, too. For the exciting sizzle, with its accompanying appetizing aroma, stimulates the sense of hearing and smell—helps to sell that steak.

Yes, and a set-up box has a selling sizzle, too —the sizzle of eye appeal. That's because a set-up box is colorful and attractive in design. What's more, its many re-use possibilities give it an unequalled take-home value. Small wonder, then, that the set-up box helps to sell more merchandise than any other container.

So give your product the added advantages of the point-of-sale preference and excellent product identification which a set-up box offers. Specify set-up boxes for your 1948 packaging requirements.

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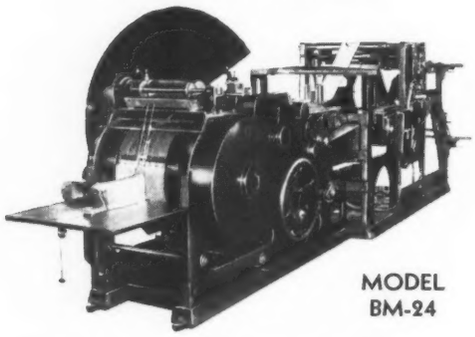
BAG MACHINES



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MANUFACTURERS OF SUPPORTED AND UNSUPPORTED CAST THERMOPLASTIC-RESIN FILMS. Factory: Plainfield, Conn.

for shipping fresh fruits and vegetables. The total was 22% over the prewar figure and the estimate for 1947 indicates only a slight decrease under 1946, accounted for by poor produce crops. Expectations are that 1948 requirements will be amply met, though the industry is reluctant to predict the volume. Steel wire—vital item in the production of wirebound containers—is the only shortage item that presents any problem and the future outlook for that material is very cloudy. Manufacturing facilities are adequate unless there is a demand far beyond any justified expectations. Deliveries are on schedule, but price predictions can't be made in view of the number of variable factors.

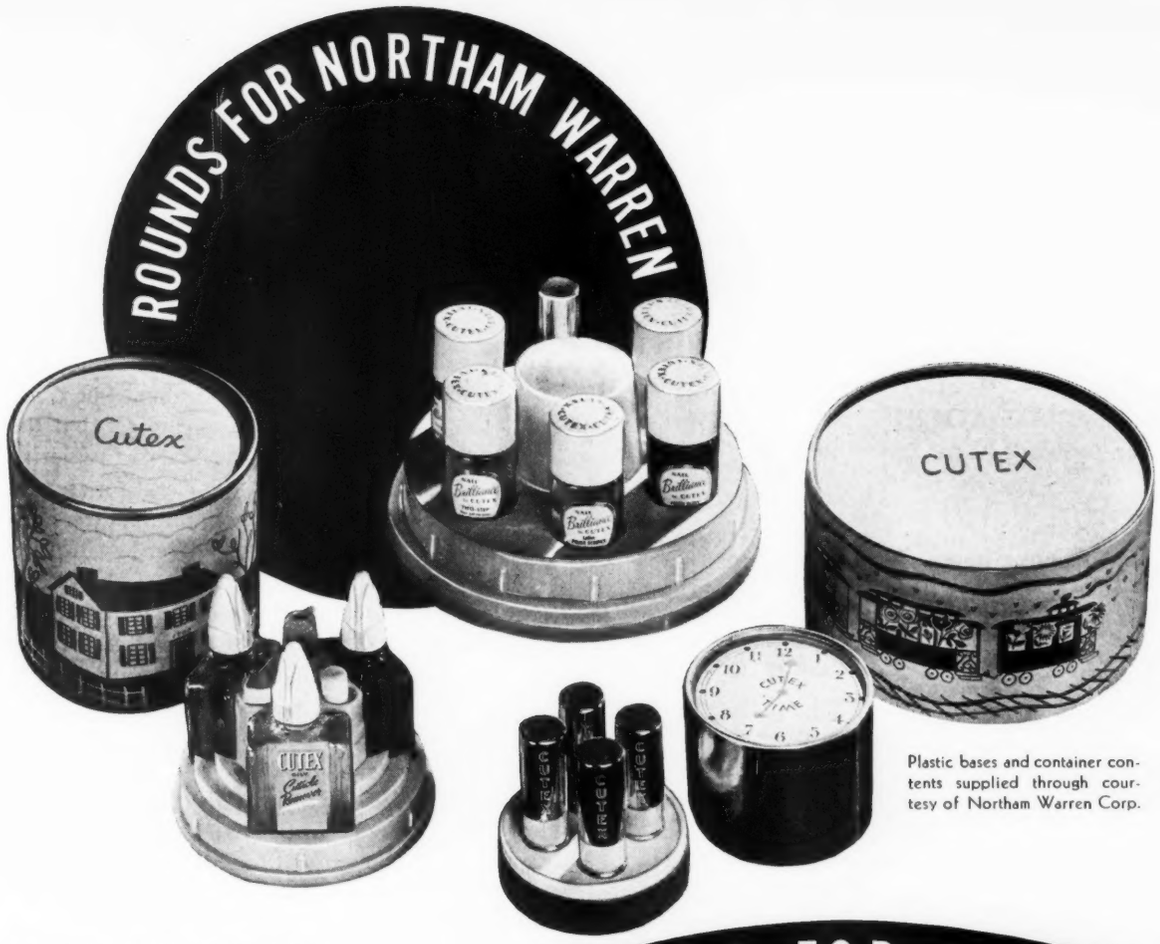
PACKAGING MACHINERY

Practically without exception, machinery manufacturers in the packaging field are enjoying the biggest volume in their history and the prospects are that all-out volume will continue for several years.

In answer to a specific questionnaire sent to manufacturers whose production consists primarily of packaging equipment, members of the industry reported that their production for 1947 would exceed their prewar years by percentages ranging from 25 to 400%. Similarly, their anticipated volume for 1948 is expected to exceed 1947 by from 10 to 50%. Even the more conservative manufacturers predict that 1948 will be as big as 1947. In only two cases did the responses indicate a possible decreased production for 1948.

Nevertheless, machinery manufacturers made striking progress during 1947 in catching up with their backlog and a few machines are even being advertised for immediate delivery. Observers say that were it not for the unpredictable effect of the Marshall Plan on the needed supplies of steel and parts, prospects would be excellent for near-normal delivery on most types of packaging machinery by the end of 1948. It is significant that many new models and entirely new types of packaging machines have been introduced during the last year. The big backlogs remaining—some of them said to extend as far as 1950—are on standard types of machines that have been popular for years. One machinery buyer reports that it is easier now to get a special machine built and delivered than to obtain one of the popular standard models, for which new orders seem to be piling up about as fast as shipments go out. Delivery promises on new orders generally show a variation from 60 days up to two years.

There is another factor in the European program that might upset all calculations and that is the extent to which Europe will need completed packaging machines. In all of the voluminous published surveys of European-aid requirements and American resources to meet them, there is no mention of packaging machinery as such, except for the lumping of "canning machinery" under general requirements for industrial machinery. There is no breakdown of this figure. Yet it would seem that in any program to get Europe's own production and distribution of essential commodities back on its feet, a certain amount of packaging machinery would be



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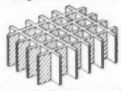

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vital—even though the smaller European countries have never been as highly mechanized in packaging as this country.

Some packaging-machinery manufacturers have always exported a certain percentage of their product, but others have been virtually ignoring the foreign market under the postwar pressure of orders from domestic users. Should firms in the latter category now be required to allot a large volume to Western Europe, it would certainly change the domestic supply picture for 1948.

Machinery prices, it is predicted, will fluctuate with other conditions. Very few manufacturers, if any, are expecting a downward movement. Some feel that the price level will remain the same, but the vast majority consider a further increase inevitable due to increased costs of materials and labor. Some manufacturers are booking orders for future delivery on an open-price basis.

At the moment, before the Marshall Plan has taken effect, the material situation is vastly better for the machinery manufacturer than it was a year ago. Last year gray-iron castings represented the chief shortage problem and they are still somewhat hard to obtain, although much improved. Among other items in short supply are chain, motors, pumps, bearings, rubber belts and, especially, various sizes of sheet and rod steel. In the judgment of some manufacturers, there is little prospect for shortages to adjust themselves fully during 1948; the majority, however, at the time of our survey were optimistic about the coming year and some even declared they had no problems pertaining to material.

New numbers are on the way in packaging machinery. In answer to the question, "Do you expect to launch any new numbers in 1948?" all but a few said yes. Only two said they were making no announcements and two others definitely did not expect to launch new machines.

General advice to the machinery buyer still is to place orders as far ahead as possible.

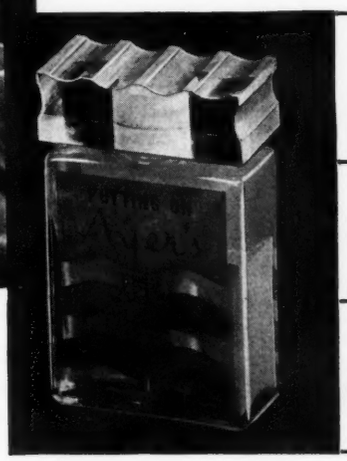
Friendship Train drums

During recent weeks many fibre drums have been used in repacking of foods for safe delivery to the beneficiaries in Europe—both under the United Nations Children Relief Program and the Friendship Train contributions.

The food arrived at the ports of New York and Philadelphia packed in standard sizes and grades of containers generally used for domestic shipping, but not adequate for ocean transportation, where they would have to be strong enough to resist crushing and damage from high relative humidity.

The products were repackaged in large fibre drums, each having a capacity of 41 gal. or 5.48 cu. ft. and clearly identified with Friendship Train labels in various languages showing that the foods contained are gifts from the United States.

Decorators and Printers



Creative means the finest decoration on your glass, plastic or metal container —

Creative means unlimited production facilities —

Creative means an expert technical staff to solve your printing problem.

Creative

PRINTMAKERS, INC.

200 VARICK STREET, NEW YORK 14, N. Y. • WALKER 5-6300

SURFACE DECORATORS FOR THE PACKAGING FIELD

In Canada: 2424 Yonge Street, Toronto, Ontario

CLASS OF SERVICE

This is a full-rate Telegram or Cablegram unless its deferred character is indicated by a suitable symbol above or preceding the address.

WESTERN UNION

1201

JOSEPH L. EGAN
PRESIDENT

SYMBOLS

DL = Day Letter
NL = Night Letter
LC = Deferred Cable
NLT = Cable Night Letter
Ship Radiogram

The filing time shown in the date line on telegrams and day letters is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination

LD1 PD=ELGIN ILL 3 919A

YOU=

YOU ARE CORDIALLY INVITED TO THE FIRST SHOWING OF ELGIN'S NEW HIGH SPEED FILLING MACHINES JAMS - JELLIES MAYONNAISE - PEANUT BUTTER AND SIMILAR PRODUCTS CANNERS SHOW ATLANTIC CITY JAN 16-21 SPACE 78. IF YOU CAN'T COME WRITE TODAY FOR DETAILS=

ELGIN MANUFACTURING CO ELGIN ILLINOIS.

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

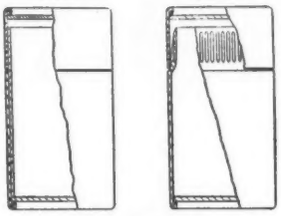
DEVELOP NEW MERCHANDISING IDEAS
with this box!

These new boxes have a unique construction which makes cap seal-tight even after many removals and replacements. Safety neck does the trick. Ideal for packaging metallic parts, vials, and many other products. Cap locks contents in to prevent damage to a fragile end. Adaptable for automatic filling and capping.

Ask for samples and prices

Camro Corporation merchandises its roll film in these new containers. The box that adds shelf-appeal while affording perfect protection.

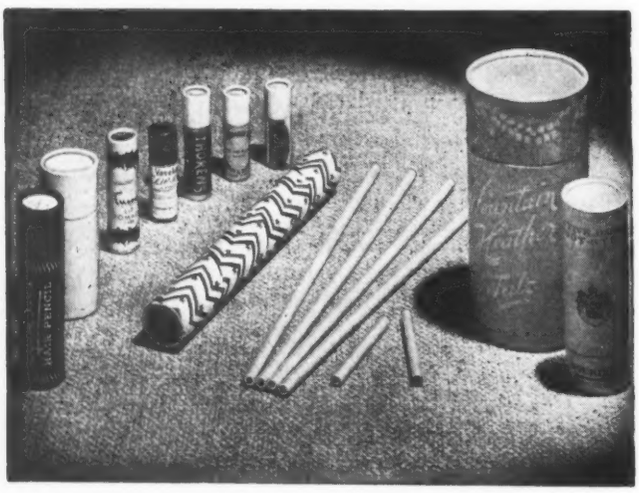
OLD NEW*



* Pat. Pending

NIEMAND BROS. Inc.

37-01 35th Avenue, Long Island City 1, N. Y., RAvenswood 8-0909



TUBULAR *Paper* PACKAGES

Tubular Paper Packages have very wide use under present post-war conditions. They are sturdy, lightweight, and can be attractively decorated in a wide range of colors.

DIAMETERS: 1/16" TO 6"—IN ANY LENGTHS

Ask for Quotations

DIAMOND STRAW & MACHINE CORPORATION

32-36 WEST 18th STREET
NEW YORK 11 DIAMOND N. Y.

Packaging shows

Extension of the 1948 A.M.A. Packaging Exposition to a five-day schedule instead of the usual four will permit a re-arrangement of hours for the concurrent conference of Packaging, Packing and Shipping so that there will be no conflict.

The 17th annual Exposition & Conference will be held in the Public Auditorium at Cleveland, April 26 to 30.

Conference sessions will be held in the mornings only, on the first four days, ending at noon when the Exposition doors open. The Exposition hours will be from noon until 6 P. M. on Monday, Tuesday and Thursday, and from noon until 10 P. M. on Wednesday. On Friday, the final day, with no conference session scheduled, the Exposition will open at 10 A. M. and close at 3 P. M.

This decision was reached at a meeting of the Exhibitors Advisory Committee with American Management Assn. officials last month. At the same time, it was agreed that the 1949 Exposition & Conference would be held in Atlantic City the week of May 7.

The A.M.A. event returns to the Midwest this year for the first time in four years, after previously having been alternated each year between the East and the Midwest. It is expected that the alternating schedule will now be resumed.

More than 200 exhibitors are expected to utilize 100,000 sq. ft. of floor space in this year's Exposition at Cleveland, making it the largest yet. They will, as usual, display the latest developments in packaging materials, machinery, design and services. Last year's show in Philadelphia was crowded by a trade attendance of more than 16,000 and the exhibitors, headed by Alan S. Cole, general manager of MODERN PACKAGING, as chairman of the Advisory Committee, requested a five-day showing this year.

In the conference sessions, arranged by Henry Howlett, secretary of A.M.A., more than a thousand packaging executives, engineers and technical experts are expected to hear discussions sponsored by A.M.A.'s Packaging Division covering management aspects of materials, methods and merchandising.

Inquiries as to Exposition space should be directed to Clapp & Poliak, Inc., 350 Fifth Ave., New York, the Exposition managers. Arrangements for attendance at the Exposition & Conference may be made through the same office.

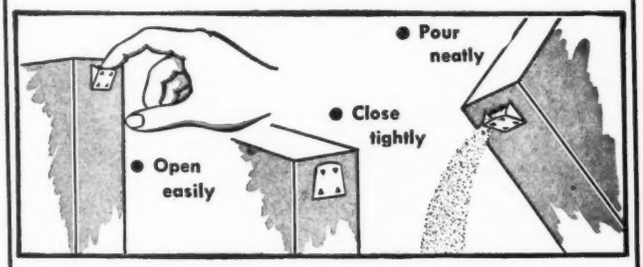
West Coast show

Clapp & Poliak also will sponsor and manage the first Western Packaging Exposition, to be held in San Francisco's Civic Auditorium Aug. 10 to 13 this year. This is designed purely as a regional show, to bring package suppliers into contact with West Coast users. The rapid growth of the Western market for packaging in such fields as frozen foods, dried fruits and fresh produce, together with the fact that many of these users find it impossible to attend the Eastern show, is believed to justify a separate annual exposition. Exhibitors will

Housewives dislike packages with messy torn tops—packages that are difficult to store on pantry shelves—packages that waste and spill contents during kitchen "measuring out."

Yes, Mr. Packer, housewives prefer packages with SEAL-SPOUTS* because:

- They're easy to open—no messy torn tops.
- Products keep dry, fresh, clean.
- A teaspoon or cupful can be "measured-out" without waste or spillage.
- They can be kept tightly closed against insects, dust and moisture.



If you package free flowing, granular products, heed this consumer preference and you'll have "an edge" on competing brands.

SEAL-SPOUTS are automatically inserted in your own-production line—without making a hole in the carton. The process is simple and speedy. Capitalize on this high consumer preference. Use SEAL-SPOUTS.

Send us one of your packages and we will put a SEAL-SPOUT in it.

* T.M. Reg. U. S. Pat. Off.

SEAL-SPOUT CORPORATION
363 Jelliff Ave., Newark 8, N. J.

FOR 50 YEARS

Peters Packaging Machinery

In 1898 Peters Machinery Company built its first packaging machine. Since that time the name PETERS is the NAME in modern packaging machinery.

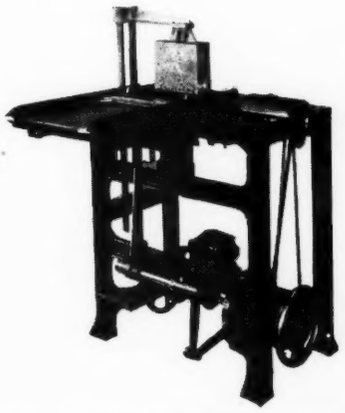
Through continuous research and engineering skills, PETERS has brought to the packaging field, machines known for their fine construction, ease of operation and perfect performance.

Employing the least expensive materials in carton structure our packaging machinery has produced the most economical packages for half a century.

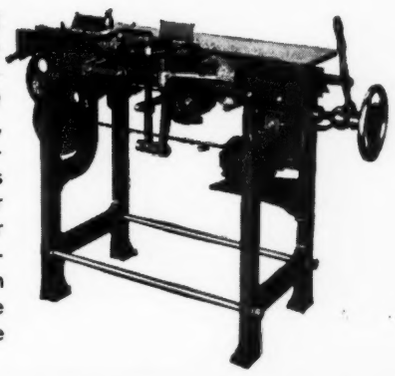
No producer of cartoned packages can afford old time hand methods when PETERS PACKAGING MACHINERY is obtainable for a remarkable savings per package.

By furnishing us with samples of your packaging problems, we can offer suitable and efficient machines to effect a real saving.

Either medium production equipment as illustrated, or high-speed machines for greater production requirements are available.

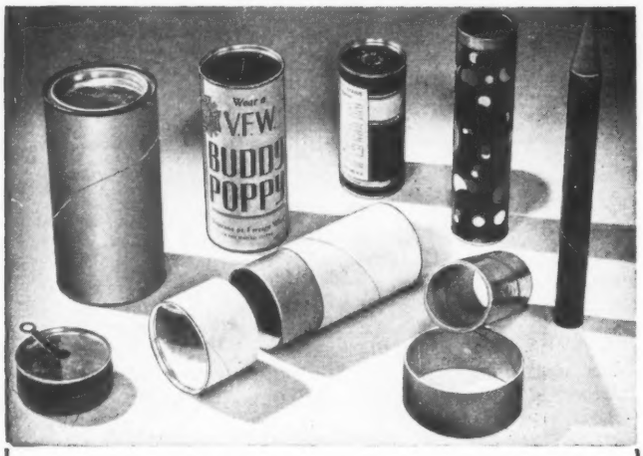


This PETERS JUNIOR CARTON FORMING & LINING MACHINE sets up 35-40 cartons per minute, requiring only one operator. After the cartons are set up, they drop onto a conveyor where they are carried to be filled. Machine can be made adjustable to set up several different size cartons.



This PETERS JUNIOR CARTON FOLDING & CLOSING MACHINE closes 35-40 cartons per minute, requiring no operator. After cartons are filled, they enter machine on conveyor and are automatically closed. Can also be made to close several different size cartons.

PETERS MACHINERY COMPANY
GENERAL OFFICE AND FACTORY
4700 RAVENSWOOD AVE., CHICAGO 40, ILL.



ROUND TUBES AND PACKAGES
Available Now!

PACKARD offers spiral-wound round tubes and containers in all conceivable lengths and diameters—drum-shape, long, thin, flat. Sturdy and light-weight, PACKARD containers are perfect for any dry commodity—foods, drugs, chemicals, cosmetics, toys, novelties, insecticides, electrical products, shipping, textiles.

And these low-cost containers are available *immediately!* Whether you choose metal-end or paper-cap, plain or labelled—watch your product go in a PACKARD package.

PACKARD CONTAINER CORP.
5811 Park Avenue West New York, New Jersey
Phone Union 5-5818

WAXES
For paper board impregnation

ZOPHAR MILLS 102 YEARS QUALITY SERVICE EXPERIENCE

FOR DIP COATINGS
EMULSIFIED WAXES
COATING WAXES

•

Meet Army and Navy specifications
WAXES FOR FUNGUS PROOFING
Our laboratory will welcome your problems

•

Zophar Mills, Inc. has been known for its dependable service and uniformity of product since 1846.

ZOPHAR MILLS, Inc.
Established 1846
106-26th Street • Brooklyn 32, New York

be drawn from all over the country, but the attendance will be mainly West Coast.

According to Saul Poliak of Clapp & Poliak, there will also be a concurrent Western Conference on Packaging, Packing & Shipping. The conference program is now being prepared by a council of Western management executives and packaging authorities. Kenneth K. Dean, publisher of *Good Packaging*, is general chairman.

A number of exhibitors already have been signed up and indications are that many Eastern package-supplying firms, as well as West Coast ones, will be represented.

Frozen Foods Exposition

Many packaging suppliers and users also will be represented at the second annual National Frozen Foods Exposition, which will be held this year at the Hotel Stevens, Chicago, on March 15 to 18. Since packaging is one of the principal problems of the frozen-food packers, much of the conference program and many of the exhibits will be directly concerned with new packaging developments applicable to frozen foods.

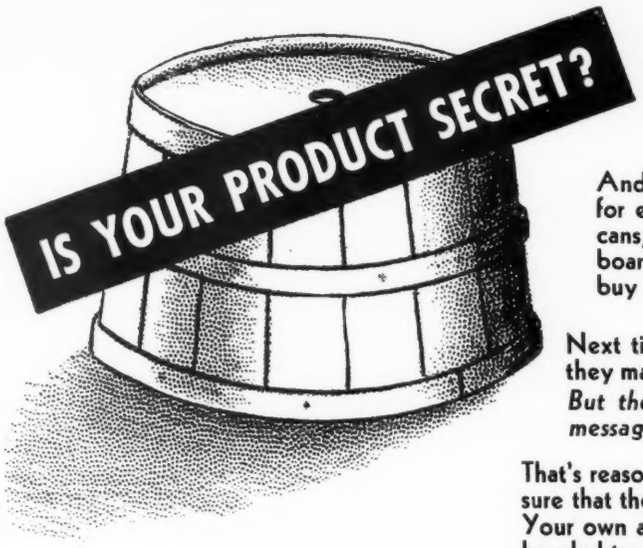
In the assignment of exhibit space, last year's exhibitors were given priority. The deadline on priority has now passed and the remaining area is open to all, according to Clapp & Poliak, who will manage this show also.

Study of steel container

A three-year project of research and development in the steel-container field, involving an expenditure of $100,000, has been undertaken by the Battelle Memorial Institute, Columbus, Ohio, according to an announcement by L. B. Keplinger, president of the Steel Shipping Container Institute.

The program will start with a survey of industrial plants, headed toward a basic program of study to learn how to obtain the proper surface of a steel sheet for best results in coating, and further studies of coating compounds which should be used for a wide variety of products. The studies will broaden the base of types of products which can be shipped in steel containers and assist industrial users in obtaining shipping economies through purchase of the most practical types. Prior to the survey of plants, efforts will be made to obtain a complete compilation of present techniques, the available facilities and standard practices now used by the various companies. There are 28 member companies of the Institute participating in the program and additional cooperation has been provided by manufacturing chemists who have formed a cooperating committee.

Cooperation of industrial users of steel shipping containers in the petroleum, food and paint and varnish fields is expected. The types of containers to be studied are those with capacities ranging from 1 to 110 gallons. A technical advisory committee comprised of industry executives has been appointed.



The key men in the five billion dollar packaging industry don't waste time looking for the goods and services they need. That's why they do their product hunting in the advertising pages of the Modern Packaging Encyclopedia.

And they don't come out empty-handed. Last year, for example, they bought 13,000,000 tons of rubber, cans, foil, collapsible tubes, paper, cellophane, boxboard, closures and plastics alone! This year they'll buy even more.

Next time these readers reach for their Encyclopedia, they may be looking for *your* kind of product or service. *But they won't know what you have for sale if your message isn't there.*

That's reason enough why you should act now to make sure that they *will* see your message in future editions. Your own advertising agency or our representative will be glad to give you facts and figures on the growth, acceptance and readership of an Encyclopedia advertisement. Moreover, they can take immediate steps to reserve space for your sales story in the 1949 Edition.

MODERN PACKAGING ENCYCLOPEDIA

Published by **PACKAGING CATALOG CORP.**

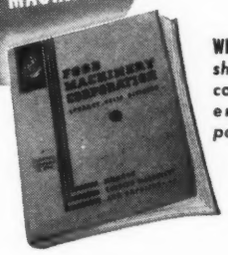
122 EAST 42nd STREET NEW YORK 17, N. Y.

Saves Shipping Room TIME! SPACE! COSTS!

FMC SHIPPING CASE SEALER

Complete machine, comprising sealing and compression unit. The two units are operated at different speeds, by separate motors.

FIGHT MOUNTING COSTS with FMC MODERN MACHINERY



WRITE FOR FMC CATALOG *showing largest, most complete line of modern processing and packing machinery.*

Automatic is right! The FMC Shipping Case Sealer seals the top and bottom flaps of shipping cases as they pass by in a continuous, fast-moving stream. Adhesive is applied to the inner flaps only, thus greatly reducing the overall dimensions of the machine.

Specially designed transferring device, which insures that all cases travel end-to-end through compression unit, reduces overall length so that minimum floor space is required.

Sealer is fully adjustable; will handle a wide range of case sizes at a speed of 450 to 1350 cases per hour.

K-404

FOOD MACHINERY CORPORATION

SPRAGUE-SELLS DIVISION • HOOPESTON, ILLINOIS

BALTIMORE • NEW YORK • SAN JOSE, CALIFORNIA (ANDERSON-BARNGROVER DIVISION)

a new product to package?
want to cut packaging costs?
short on materials?

Get the answer from *Minerva*

Expanded production facilities are enabling Minerva to supply more and more packagers with profitable solutions to their package material problems.

If *papers, films* or *foils* are a part of your problem Minerva can offer worthwhile help. Write, stating your problem. Our suggestions will involve no obligation on your part.

MINERVA
WAX PAPER CO.
MINERVA, OHIO

CONVERTERS, LAMINATORS, PRINTERS OF PAPERS, FILMS AND FOILS

WESTERN CARTON CO.
FOLDING CARTONS
KALAMAZOO, MICHIGAN
Folding Cartons
Counter Display
Die Cut Blanks Flat or Stitched
Setup Box Blanks
Folding Displays
Baskets and Carriers
MANUFACTURERS OF
FOLDING CARTONS • WINDOW & COUNTER DISPLAYS • DIE CUT SET-UP BOX BLANKS • PAPER CARRIERS • 2 PC. FLATS FOR STITCHED OR METAL EDGE CARTONS • DIE CUT INSERTS FOR TANGIBLE MERCHANDISE • SUIT & MILLINERY CARTONS • BAKERY CARTONS • PARCEL POST SHIPPERS • PARTITIONS OF ALL TYPES
WESTERN CARTON COMPANY
KING HIGHWAY
KALAMAZOO, MICHIGAN
CREATORS – DESIGNERS OF DISTINCTIVE PACKAGING AND SPECIALTIES
CHICAGO SALES OFFICE – 737 NORTH MICHIGAN AVE. – PHONE SUPERIOR 3038-3039

Nitrogen pack

(*Continued from page 117*) which has been entrapped in the tiny particles of product during the spray-drying operation. It is even possible to observe these air cells microscopically. The tiny particles of product can withstand the tremendous vacuum that is applied to the product without releasing this residual air. The character of the cell walls must indeed be very strong to retain this air under vacuum.

It has been found by Hetrick and Tracy (1)* that dry milk packed from the dryer at a temperature of approximately 100 to 125 deg. F. retains less oxygen than dry milk cooled to 60 deg. F. before packaging. Aging the powder 18 to 24 hrs. before packaging increased the amount of retained oxygen. These observations have been confirmed by Coulter and Jennes (2).

It appears that after a period of one week the amount of free oxygen in the can will reach a maximum and thereafter remain quite uniform, assuming, of course, that the can is properly sealed. It is important to remove as much as possible of the residual oxygen from the product during the vacuumizing operation.

One approach has been multiple gassing, i.e., a second gassing operation after a definite period of time. A second method is to draw a vacuum on the product and hold it for a considerable length of time to allow for the diffusion of the air through the particle walls.

A third method that is sometimes used employs dry ice; several pounds of dry ice are added to a barrel of powder and the carbon dioxide from the ice will then tend to replace a large part of the air, which in turn will lower the oxygen content of the container to a degree depending on the amount of dry ice used. The product is then packaged in the final container.

In the selection of a package and method for Magic Freeze, all of the various problems discussed were carefully considered. The amber glass jar selected meets requirements in that it is water-vaporproof, impervious to harmful light rays and capable of being filled, gassed, sealed and labeled with high-speed machinery.

After the bottles are filled, the caps are placed on loosely and the bottles placed in a vacuum chamber. A vacuum is drawn on the bottles and released by nitrogen gas. After the gas has reached a pressure equal to that of the atmosphere, the bottles are removed and passed through the capping machine, making a permanent seal. In such an operation it is important to use a vacuum pump that is efficient and will produce a vacuum that is very nearly complete.

After several years of research, Magic Freeze is now packaged in a manner that makes it possible to market a complete ice-cream mix that will reach the consumer in an appealing, convenient, full-flavored condition.

References

1. Hetrick, J. H., and Tracy, P. H., "Factors Affecting the Oxygen Content of the Gaseous Phase of Packaged Whole Milk Powder," *J. of Diary Science*, 27, 685–686, 1944.
2. Coulter, S. T., and Jennes, Robert, "Gas-Packing Dry Whole Milk," *Food Industries*, *18*, 352, 1946.

* Numbers in parentheses refer to "References" appended.

PRODUCTS PACKAGED IN LUSTEROID MEAN "CLEAR SELLING" AHEAD

Your sales job is made easier when your product is "clothed" in sparkling, crystal-clear LUSTEROID.

These modern plastic vials and tubes are actually small showcases that display your product while protecting it in transit, over the counter and in use.

Remarkably light in weight, LUSTEROID containers are strong, rigid and unbreakable. Their printability saves on labeling. Their wide variety of colors—clear or opaque—makes them a most effective merchandising medium.

LUSTEROID comes in standard diameters of 1/4" to 1-1/4" and lengths to 6". Cork, slip-on or screw-cap closures.

Write for full details today.

LUSTEROID CONTAINER CO., Inc.
Formerly Lusteroid Division of Sillcocks-Miller Company

10 W. PARKER AVENUE, MAPLEWOOD, N. J.

Wrap any of these or similar articles?

TEXTILES	CAKES & SWEET GOODS
PAPER PLATES	COOKIES
PAPER NAPKINS	FRESH PRODUCE
BOXED FLOWERS	MEATS & CHEESE
DRIED FRUITS	ETC., ETC.
BOXED CANDIES	

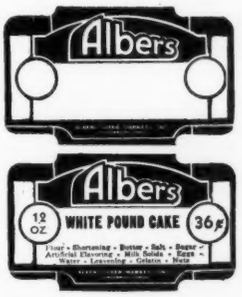
The versatile "Oliver" can reduce your wrapping and labelling costs!

"Oliver" Wrapping Machines are engineered to wrap and label a great variety of packages in a wide range of sizes, *and wrap each package successfully!* Production men in many industries know this. Products—contained in cartons, trays, U-boards or flat cards—are wrapped in almost any heat-sealing material. Makes a strong seal for moisture protection. Colorful labels, automatically heat-sealed to the wrappers, add to their eye-appeal. Yet the wrapping-labelling cost is surprisingly low.

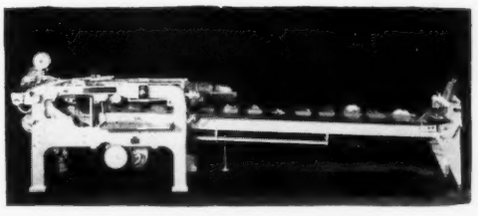
QUICKLY, EASILY ADJUSTED

You'll find "Oliver" features most versatile. You get hour after hour of production without costly delays for adjustments. Can be adjusted for package size in a minute or two. Wrapper length adjustable while machine is running. Change from endfold to underfold instantly. The rolls of labels can be changed in a jiffy. *These quick adjustments save dollars.*

AUTOMATIC ROLL-TYPE LABEL IMPRINTING SYSTEM



An attractive diecut label from a continuous roll (printed by Oliver) is accurately and firmly heat-sealed to the outside of the wrapper by the automatic Labeller. A "blank" label can be imprinted with essential information just before it is applied. Imprint items can be changed quickly. *Write for complete details.*



Made in 7 different size ranges. Infeed conveyors 6, 9, 12, 15 ft. long. Automatic Cardboard Folder and Feeder. Electric-eye registration of printed wrappers. Easy to operate.

"Oliver" Wrapping Machines
WITH AUTOMATIC ROLL-TYPE LABELLING SYSTEM

OLIVER MACHINERY COMPANY, GRAND RAPIDS 2, MICH.

Famous 3's

Beauty-Pak
TEXTILE PACKAGINGS

① A complete line of packagings serving the Hosiery and Textile Industries, including chemically-neutral inserts, embossed glassines, cellophane envelopes "*Beauty-Pak* your products"

The **Milgate** LINE

② Hot-melt coated and /or laminated papers, cellophane, films, laminated greeting card, lamp shade and functional papers; heat-seal label papers; frozen food papers; decorative wrapping, shelf paper.
"*Milgate*, your assurance of quality"

Paksure
FOOD PACKAGINGS

③ A complete line of wrappings, bags, envelopes and boxes, in cardboard pliofilm laminated papers, etc., for all food packagings including frozen foods. Stock or original packagings.
"Be sure with *Paksure*"

Packaging Division 784 Public Ledger Building
E. W. Tuttle Incorporated Philadelphia 6, Pa.

Cans of Distinction

Here are "customer-catching" cans—designed and made *exclusively* for your product. These lithographed containers combine easy brand identification with ideal product protection.

We also manufacture a complete line of round cans with stock designs for candies, cakes and cookies.

Write today for our illustrated catalog.

"No other container protects like the can"

Empire Can Corp.

220 Ashford St. Brooklyn 7, N. Y. APpelgate 7-4701

DuPont sued as cellophane trust

The Department of Justice last month filed an anti-trust action against E. I. du Pont de Nemours & Co., Inc., charging the company with monopolizing the cellophane industry "by the unlawful employment of patent rights and the fixing of arbitrary and non-competitive prices."

In a statement to the press, Attorney General Tom C. Clark said: "This is a major case directed at a serious monopoly condition where avenues of competition are closed. For many years Du Pont's cellophane plants have produced in excess of two-thirds of all of this commodity used in this country. This illegal monopoly power stifles free enterprise and should be eliminated."

The government proposed that Du Pont be required to sell at reasonable prices "such of its plants as may be necessary to permit others to enter the cellophane field."

The government alleged that "Du Pont acquired and supported its monopoly through various cartel agreements allocating world markets between it and leading foreign cellophane manufacturers and providing for the exclusive interchange of technical information between Du Pont and its co-conspirators." Six foreign firms were named as co-conspirators.

In an immediate statement, the Du Pont company said it "not only denies the charges of violation of the anti-trust laws, but is unable to figure out who stands to benefit by the government's action.

"Ever since it was first produced by Du Pont in this country in 1937," the statement continued, "cellophane has had to fight for acceptance against the competition of metal foils, waxed papers and other plastic films. By granting licenses under its patents to the other American producer of cellophane, Du Pont has made it possible for its competitor to expand. . . .

"It is true that there is not enough cellophane today to meet the demand. How this suit will remedy that condition is not clear, for the field is open for anyone who is willing to risk the large plant investment which this business requires. . . .

"In addition to work now in progress to increase cellophane capacity, Du Pont has been planning to make further investment to expand its facilities to take care of the current demand. The present suit may question Du Pont's right to go ahead. . . ."

The Du Pont statement pointed out that the company since 1923 has made 21 price reductions from the original price of $2.65 a pound for cellophane to "the current price of 42 cents a pound." However, Du Pont recently announced an increase in price on most grades of cellophanes and Sylvania—the competitor referred to in the Du Pont statement—on Jan. 2 issued a new price list showing increases on moistureproof grades.

According to the Department of Justice, gross sales of cellophane in 1946 amounted to about $62,000,000, of which Du Pont, it was said, accounted for more than $46,000,000.

NEW! *Molded* FABRIC BOX PLATFORM

Dresses up your package
Protects your product

By combining cloth impregnating and special molding processes, we have produced this distinctive, attractive box platform. It's smart, light-weight, inexpensive. It can be custom-molded for your product in *any* color, in practically any fabric surface. With it you get the effect of a fabric lined box without the costly hand fitting usually involved in making such a unit.

The platform is molded in one piece, complete with the number of recesses needed. Each recess is the exact size necessary to hold the product that goes into it. And the semi-rigidity of the molded unit acts like a coil-spring shock absorber, protecting fragile contents against breakage during shipment and handling.

This attractive custom molded platform, created for Max Factor of Hollywood, to keep each article neatly and firmly in place.

If you pack your product in a set box, you should investigate this unique platform today. Write or phone today.

CREATIVE MOLDED PRODUCTS CO.
434 SIXTH AVENUE, NEW YORK, N. Y. · GRamercy 7-4170

THE RODGERS FILLER *saves money 3 ways*

1. BECAUSE IT DOES MANY FILLING JOBS

   Handles all pastes and powders. Fills containers from ⅓ ounce to ten pounds, either rigid or flexible.

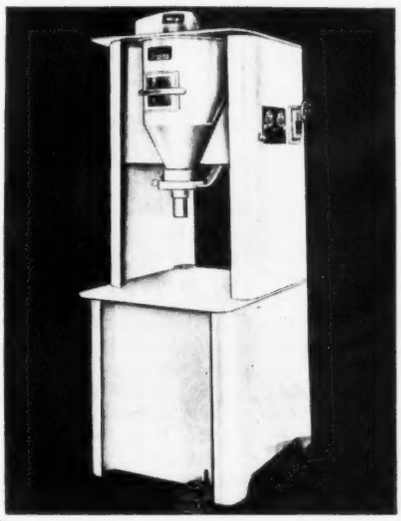
2. BECAUSE IT OPERATES FASTER

   Fills up to 60 containers per minute. Changes from a 1 ounce to a ten pound package in 10 seconds—without tools or mechanic. All parts ride on sealed ball bearings.

3. BECAUSE IT COSTS LESS TO MAINTAIN

   All moving parts are located above fill tube and can't be clogged by powder or paste. Special design eliminates clutch breakage and overheating.

   Automatic attachments and conveyors can be supplied with this filler.



Our free descriptive Bulletin M-1 will give you more information about the cost-cutting ability of the Rodgers Fillers. Write for it today.

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225 WEST 34th STREET, NEW YORK 1, N. Y.
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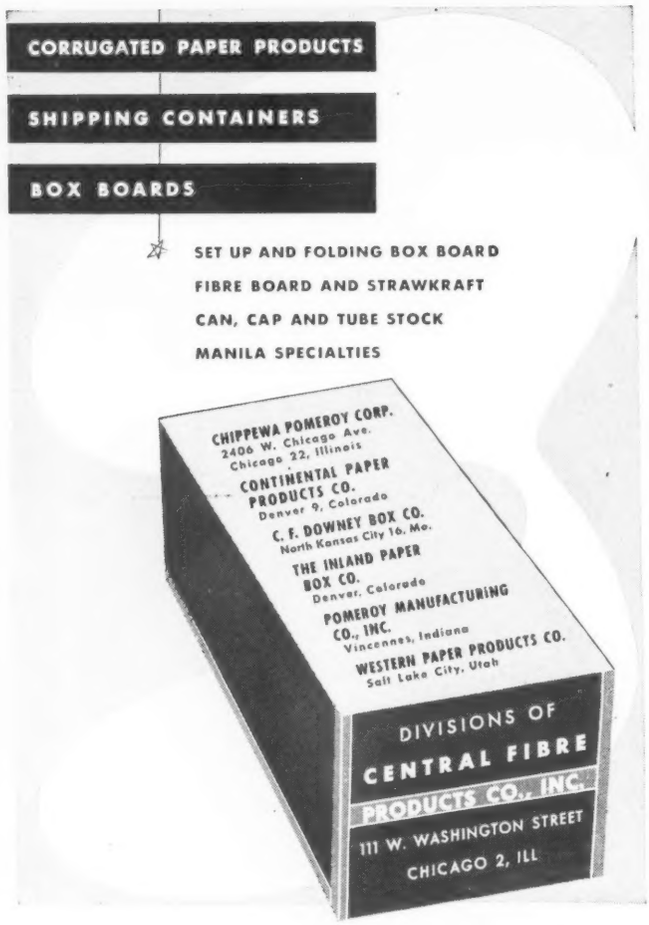
Model 6-A Tube and Jar Filler
Hand operated. Fills 20 to 30 tubes or jars per minute. For pastes, ointments, semi-liquids.

OTHER RODGERS PRODUCTS

Stainless Steel Tanks	Conveyors
Stainless Steel Kettles	Powder Mixers
Tube Clips	Portable Agitators
Tube Closers	Centrifugal Pumps



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That's not double-talk. The right finish is important to your package—makes your package a leader in the competitive market. The best-looking colors, the most effective designs need the sparkling richness of good coating or the distinctive charm of embossing or die-cutting. Crawford excels at making your package a work of finished art. Our special process, "LUSTRALITE", provides the premier coating for gloss and protection.

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JOHN W. CRAWFORD CO.

160 Varick St., New York, N. Y. • WAlker 5-5473

Vus weatherproof box

(*Continued from page 90*) writers who are already giving preferential insurance rates on shipments to the Philippines and Far East in these boxes.

Availability and cost

Availability is now good. The expected monthly production in 1948 of all grades of weatherproof solid fibreboard is 8,000 to 10,000 tons; of this production, a large proportion will be Vus boxes. Nineteen companies,[2] some with several plants, currently manufacture Vus boxes or expect to be in production early in 1948 and deliveries are made to any point in the United States. A directory of these manufacturers has been prepared by the Solid Fibre Box Group and can be obtained from that organization at 919 Eleventh Street, N. W., Washington 1, D. C.

The cost of Vus boxes naturally varies with the manufacturer, the size and style of the container and other pertinent factors. It is approximately two to three times as much as that of a corresponding 175-lb. to 200-lb. test domestic corrugated fibreboard container and 50% more than that of a corresponding 275-lb. test domestic corrugated or solid fibre container.

Limitations

An account of the Vus box would be incomplete without notation of some of the limitations upon its use and effectiveness. It is not, as must be evident, a panacea for all export-packaging ills.

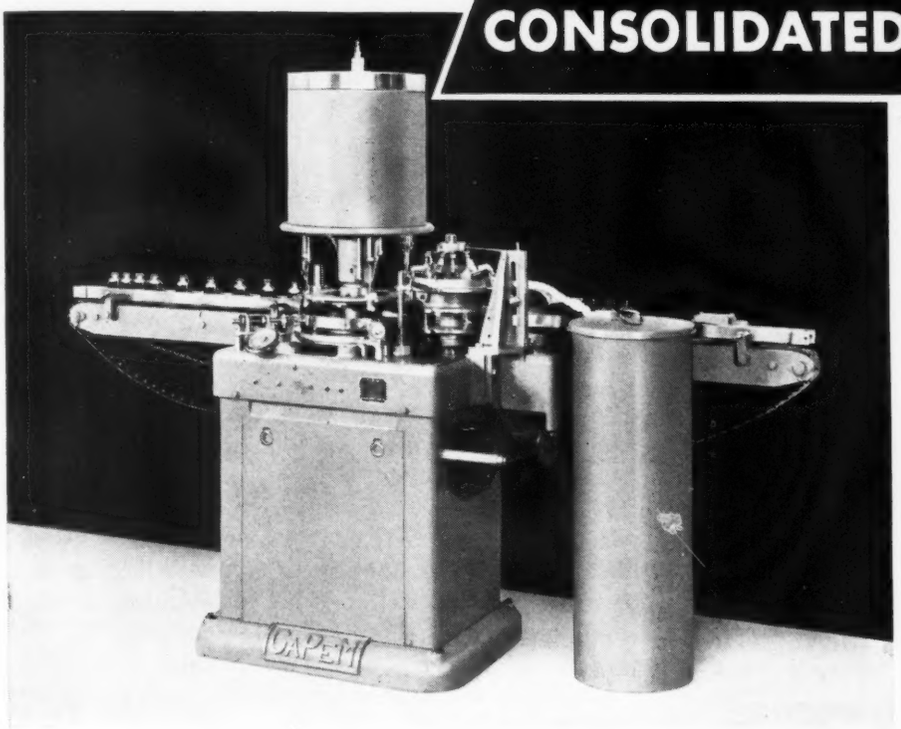
Its maximum inside dimensions (length, width and depth added) are 100 in. and its maximum gross weight is 120 lbs. Commodities which would not normally be packed in fibreboard boxes for domestic shipment most likely are unsuitable for Vus export packaging. If the nature of the packaged item normally requires cushioning which is provided by some form of interior packing, that need is not lessened by virtue of the fact that the outer shipping container is a Vus box. Efficient closure is, as always, of paramount importance; since exposure to rain and water is one of the hazards being guarded against, the flaps should be glued with a water-resistant adhesive or the box should be provided with a sleeve. Metal strapping is a desirable safeguard.

Of utmost importance is the distinction, with reference to the box, between weatherproofness and waterproofness. Vus containers are weatherproof in that, even after exposure to severe atmospheric conditions, they retain exceptionally high strength characteristics; they are not waterproof, since water and water-vapor can enter at the corners or seams of the outer flaps. If the latter type of protection is needed, additional measures must be taken, such as encasing the contents in a waterproof liner before loading.

---

[2] American Box Board Co.; O. B. Andrews Co.; Atlas-Boxmakers, Inc.; Bird & Son, Inc.; Container Corp. of America; Downing Box Co.; The Eddy Paper Corp.; Fibreboard Products, Inc.; Robert Gair Co., Inc.; Gaylord Container Corp.; Hinde & Dauch Paper Co.; Hummel & Downing Co.; Kieckhefer Container Co.; National Container Corp.; The Ohio Boxboard Co.; River Raisin Paper Co.; United Container Co.; Waldorf Paper Products Co.; Wisconsin Container Corp.

CONSOLIDATED KOTTONERS



Take the Kinks Out of Capsule and Tablet Lines

- Follow the basic design of the famous CAPEM line of automatic cappers.
- Meet the broadest possible range of requirements.
- Capacities range from 40 to 100 containers per minute.
- Protect sterility of wadding.
- Wadding easily removed from bottle by consumer.
- May be changed from one size container to another in 15 minutes.

Write for information.

CONSOLIDATED PACKAGING MACHINERY CORP.

1400 West Avenue, Buffalo 13, N. Y.

PORK SAUSAGE GLAMOURIZED

...in a package printed from *pre-madeready* MOSSTYPE RUBBER PLATES

Women get bright ideas for tomorrow's breakfast when they see this clean, neat, colorful pork sausage package on display. The all-over white ground on this glistening cellophane bag conceals its contents completely, while the brilliant blue, red and brown design speaks highly of the product's quality. Close three-color register and sharpness of fine lines and thin type also add distinction. Cello-Masters, New York, made and printed this package—Mosstype made the black-and-whites, photo engravings and rubber plates.

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- *Engineered* BLACK-and-WHITES
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MAKE BAGS FAST

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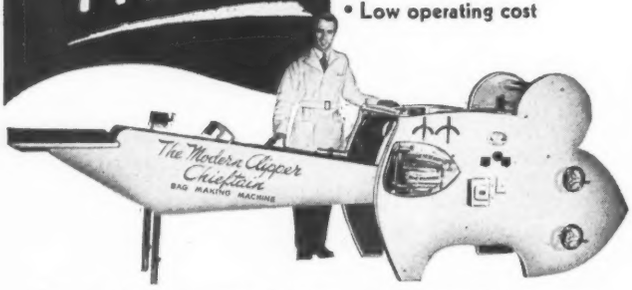

The "Chieftain"—new Modern Clipper machine—represents a brand-new design in bag-making machines. It makes flat and square bags of all heat-sealing materials; cellophane, Pliofilm, foil and plastics—with a speed and efficiency never before equalled. No skilled operator is needed. Easy to operate, precise and economical. Has center seam gluing and duplex bag making attachments.

HEAT SEALS

Because a proper heat-seal keeps out and keeps in all atmosphere, it gives you *certain* sift-proofing and leak-proofing. There is no seal that can compare with a heat-seal for protection . . . no machine that can rival the "Chieftain" for versatility and high-speed operation.

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Let US take over your headaches!

READY TO SERVE YOU... *today!*

PEARLSTONE CO. printers

21ST & WASHINGTON ST. LOUIS 3, MO.

Wife savers

(*Continued from page 85*) to withstand heat and cold, seemed to supply the only economical material to do the job.

Last summer, test packages of the individual servings were introduced in six selected areas in New Jersey, upper Manhattan and mid-town Manhattan. The tests were aimed at $2,000- to $3,000-income groups particularly. The results convinced the company that there was a definite market for the small packages and that they should be added permanently to the Maxson line.

The current package is a pouch-type packet made of two facing pieces of 0.002 foil, vinyl coated inside and heat sealed on all four sides. It costs only a couple of cents. Label information is printed on the foil header piece. The individual packages are shipped to the dealer, six of a kind to the carton, ready for display and selection in open refrigerator store cabinets. Once heated in the home, the individual sealed bags are removed from the utensil, the label end is cut or torn off and the hot food is slipped from the bag onto the serving plate. The empty foil bags are discarded.

Vegetables in these single-portion packages range from eight to 12 cents per package and include creamed potatoes, carrots, glazed apples, lima beans, Mexican corn and spinach. Entrees include macaroni, Swiss steak, roast lamb, pot roast of veal, turkey and beef goulash, weighing from $4^1/_2$ to 6 oz., and are priced from 25 to 69 cents. Thus, a pretty good meal of meat and two vegetables can be purchased for about 70 cents per person—which compares favorably in price today with raw foods—and without the waste, fuss or muss of pre paring it.

And because the packages are individual servings, all members of the family do not have to eat the same thing. Mom can pick out each member's preference, yet heat them up all at the same time. That's why Maxson calls these packages "Wife Savers."

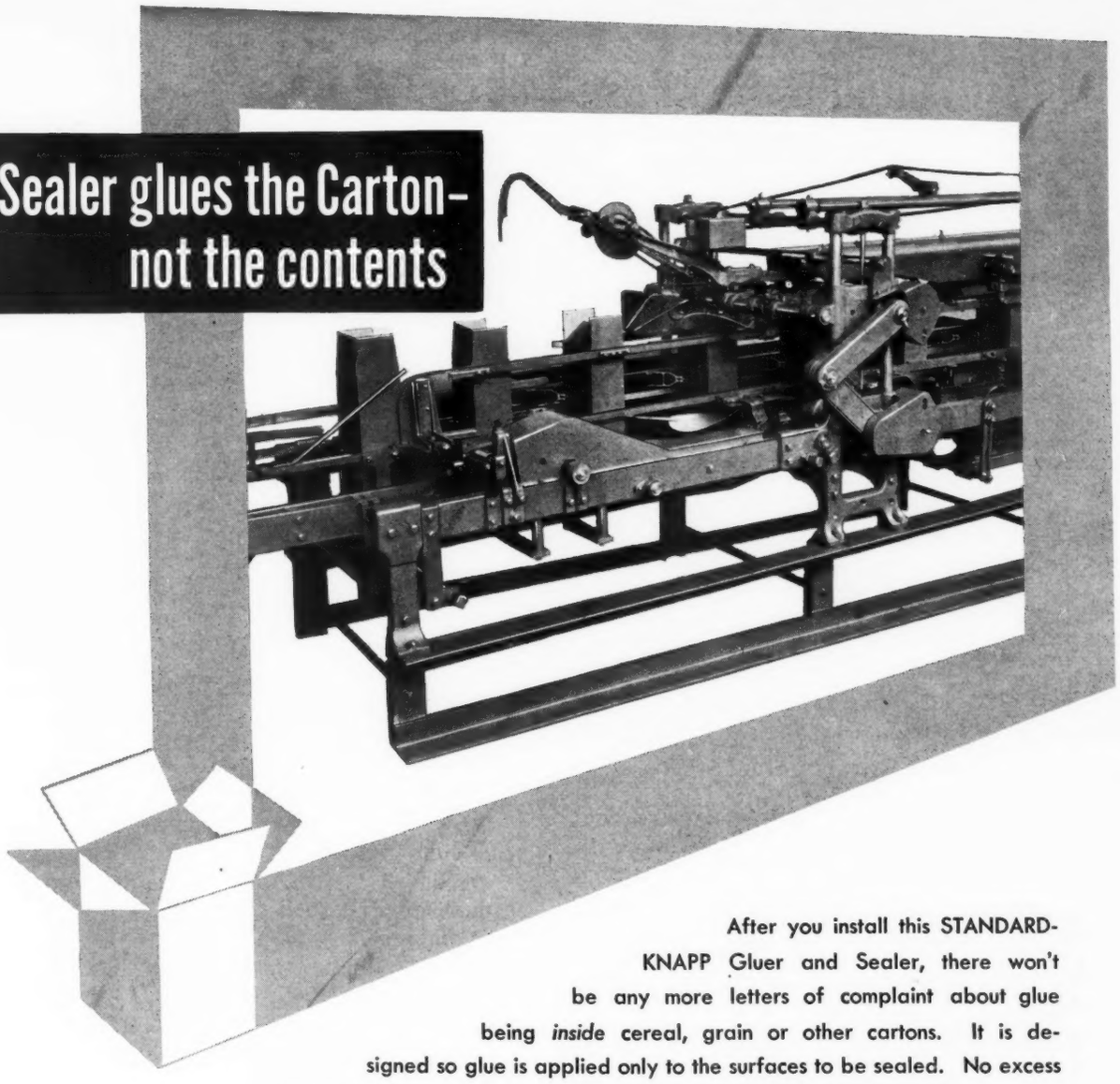
CREDIT: *Packets, Reynolds Metals Co., Richmond, Va.*

Vendor package

(*Continued from page 87*) shown in the accompanying pictures, in a Whelan drugstore at 47th and Broadway in the heart of New York's Times Square. Observation shows that it is getting steady patronage from chorus girls and actresses who want to spruce up for an important interview with a producer; theatre goers who discover a last-minute run or snag, etc.

Some installations have been made in supermarket food stores, including Food Fair in Philadelphia and Safeway in Los Angeles. Walgreen drugstores, Chicago, have some of the machines and others are placed in Boston, Washington and New Orleans. Future locations probably will include lobbies of office and telephone buildings. Complete distribution plans, however, will not be announced until the present test period

This Sealer glues the Carton—not the contents



After you install this STANDARD-KNAPP Gluer and Sealer, there won't be any more letters of complaint about glue being *inside* cereal, grain or other cartons. It is designed so glue is applied only to the surfaces to be sealed. No excess can seep into the package during sealing and contaminate the contents.

Like all other STANDARD-KNAPP equipment—can labelers, bottle packers, case packers—the Standard-Knapp Gluer and Sealer can be easily connected to your present conveyer system. Its heavy-duty construction assures dependable, uninterrupted service with a minimum of maintenance. All parts are accessible for easy cleaning.

Our packaging engineers will be glad to show you how the STANDARD-KNAPP Gluer and Sealer and other STANDARD-KNAPP equipment can add to the economy and efficiency of your plant operation.

Standard-Knapp Corporation

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You get years of experience and know-how with every PALM FECHTELER Decal. The result is beauty of design, non-fading colors, and durability, which even Nature can not duplicate.

The oldest manufacturer of decals in the U. S., PALM FECHTELER, has come by this know-how the hard way... Through years of experimentation. You can put this "ADDED TOUCH" to work for you today, by using PALM FECHTELER ENGRADEL DECALS.

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PERFECT REGISTER ...TREMENDOUS SPEED

THIS brand new No. A-4 aniline printing press offers perfect register at highest speeds on cellophanes, foils, and other materials your customers require for wrapping their products. Many other models in our complete line of presses are available for the aniline printer. Write us for complete detailed descriptions.

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has been concluded, according to Neill Mitchell, sales manager of Lehigh Foundries.

District sales representatives are visiting machines daily, checking repeat sales by customer interview, learning the sizes and shades in greatest demand in various areas and questioning store personnel for consumer reaction. Some original estimates are already being revised. It was expected, for example, that the medium sizes, $9^1/_2$ and 10, would receive the greatest play and the machines were stocked accordingly; but experience has shown that in New York, at least, the demand is greatest for $8^1/_2$.

The machine and its package attracted spotlight attention when it was shown at the convention of the National Automatic Merchandising Assn. in Chicago last month.

The trade name "Miracle" is owned by Lehigh and the 45-gauge, 30-denier hose are purchased from an undisclosed Southern mill.

CREDITS: *Package design, Robert G. Neubauer, Inc., Southport, Conn. Folding boxes, National Folding Box Co., Inc., New Haven, Conn.*

Bakery packaging study

Two comprehensive studies of packaging for the bakery industry were announced this week by the Laminated Bakery Package Research Council. They are for the purpose of determining the most effective methods of packaging a variety of bakery products including buns, cakes, doughnuts, cookies and sweet yeast-raised goods and are scheduled to begin about the first of the year.

The studies will be concerned with two broad aspects of bakery-product packaging—the physical properties of the package and its merchandising appeal. Both projects are sponsored by the council, recently established by the Laminated Paperboard Package Assn.

The study of the physical phase of product packaging will be conducted by the American Institute of Baking under the supervision of Dr. William B. Bradley, head of laboratories. Research into the merchandising phase will be conducted by the University of Chicago's Business Problems Bureau under the direction of Dr. George H. Brown, professor of marketing and past president of the Chicago Marketing Assn.

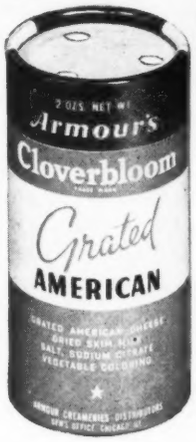
"Bakers spend more for packaging than for any ingredient used in their products, other than flour," said Dr. Bradley. "For every dollar spent for flour, bakers spend approximately 40 cents for packaging materials, according to the 1940 census of manufacturers."

Dr. Bradley said his investigation will cover approximately 50 packaging materials currently in use or recommended for use with bakery products including waxed paper, cellophane, glassine, aluminum foil and other flexible wrappers, and cartons fabricated from various types of paperboard.

The value of the packaging material studied will be

Variety

ADDS SPARKLE
.... PERSONALITY PLUS



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Cheese . . . a product known for its individuality . . . just naturally must be clothed in packages of compelling personality . . .

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• All-Fibre Cans • Combination Metal and Paper Cans
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Industrial Steel & Fibre Ltd. of Montreal, Canada, a company engaged in the manufacture of fibre drums, round fibre containers, tubes & cores, and rectangular boxes, is interested in establishing cooperation of a technical nature for manufacturing in Canada products in their line based on patents or processes used by U. S. manufacturers.

(Patent holders of products not yet produced or merchandised should not reply.)

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determined by whether it offers adequate protection against handling damage and moisture loss, whether it adversely affects flavor, the degree to which it may prevent staling and its relative cost.

The merchandising study at the University of Chicago will include an extensive survey of housewives who will be interviewed in their homes and asked to choose between bakery goods in packages of different constructions.

The membership of the Laminated Bakery Package Research Council includes Chicago Carton Co., Chicago; Container Corp. of America, Chicago; Empire Box Corp., Chicago; Marathon Corp., Menasha, Wis.; Sutherland Paper Co., Kalamazoo, Mich.

QMC research committee

The formation of the Committee on Container Research was announced today by Col. Charles S. Lawrence, commanding officer of the Quartermaster Food & Container Institute for the Armed Forces, Chicago, and George Gelman, technical director.

This will foster scientific research and training which will provide the necessary technical information and trained personnel for the solution of container problems of the armed forces. Members of the committee are Dr. William H. Aiken, Goodyear Tire & Rubber Co.; Dr. B. S. Clark, American Can Co.; Dr. James d'A. Clark, consulting engineer; Dr. R. C. McKee, Institute of Paper Chemistry; A. E. Stevenson, Continental Can Co., and Dr. J. H. Toulouse, Owens-Illinois Glass Co.

Dr. James d'A. Clark was elected chairman of the newly formed organization. He pointed out that the Committee on Container Research would assume the responsibility of recommending a program of research work which would be of benefit to the container industry in general and yet of special benefit to the armed forces. During World War II, Dr. Clark was associate chief of the Container Research & Development Division, Quartermaster Food & Container Institute, with the rank of lieutenant colonel.

It was suggested that one of the urgent container problems requiring concerted action was the establishment of new standard laboratory tests to simulate conditions likely to be encountered during domestic and overseas shipments of army supplies. Such tests would include rough handling and application of moisture and hot and cold conditions.

Another problem discussed by the Committee on Container Research was the necessity for developing a suitable case liner for use in low temperatures.

The general classification of research problems to be considered by the Committee on Container Research involves movement and storage, climatic effects, analytical procedures, materials, fabrications and the dissemination of research and development information to industry and government and university laboratories.

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MARKEM Service includes methods, machines and inks for doing the *whole* job and doing it well, *economically*. Over 300 special formula inks and marking compounds, including quick-drying, fed from semi-enclosed reservoirs. Manual, semi-automatic and automatic machines; bench and floor models. Engraved brass, and rubber type and plates to fit special type and plate holders for quick changes on variable work.

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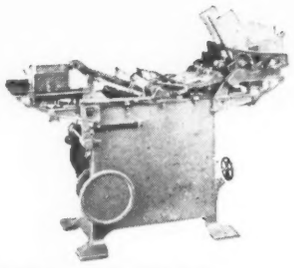

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Write for folder on either Model OPTI-CHEK or for further information on the Cottrell-Heinrich press.

Navy preparedness courses

In the event of another war, the Navy is guarding against a repetition of the losses of supplies experienced during the first year after Pearl Harbor by conducting periodic training courses in packaging and materials handling, according to Clinton K. Royce, executive vice chairman of the Navy Packaging Board.

The first course brought 27 reserve officers, including army and air-force personnel, to Jersey City in December to look over the large Hudson factory of American Can Co. They saw fully automatic machinery that fabricates tin cans at the amazing speed of over 350 a minute and learned about new postwar uses of metal containers and other developments in this field as applied to the special requirements of naval packaging.

Pointing out that total supplies handled by the container group in the Navy Bureau of Supplies & Accounts during five fiscal years of wartime operation were valued at $18 billion, Mr. Royce said the courses should save taxpayers millions of dollars by minimizing damage in shipment and deterioration in storage of supplies procured for the country's substantially enlarged peacetime armed forces.

He explained that the courses are also intended to keep reserve officers informed as to navy requirements and navy progress in the fields of packaging, materials handling, stevedoring and storage. In addition, the navy expects to learn considerable about industrial development within these fields, as well as industrial limitations. This latter data, he said, is important to keep the Navy Department from making demands on industry which prove impracticable in execution.

Loss of goods shipped overseas in the last war was reduced, he said, through the development of special shipping containers and through much greater reliance on the use of pallets in handling cartons and cases of all kinds. Resistance of metal containers to tropical atmospheres was obtained through dipping them in olive-drab paint which also serve as a camouflage.

The present course is being sponsored by the Third Naval District, New York. The men who visited American Can's plant recently were: Lt. (j.g.) C. F. Ackenheil, Pittsburgh (*The Pittsburgh Press*); Lt. W. E. Baughman, Newark, Ohio (Owens-Corning Fiberglas Corp.); CPC James T. Bothen, Cambridge, Mass. (Waltham Nash Co., Waltham, Mass.); Lt. Robert G. Abbott, Needham, Mass; Lt. (j.g.) A. F. Daniel, Charlotte, N. C. (McCoy & Daniel); Lt. Robert W. Edwards, Point Pleasant, N. Y. (Eastman Kodak Co., Rochester, N. Y.); Lt. Col. Harold M. Lovelace, Arlington, Va.; Maj. Leonard N. Young, Arlington, Va.; Lt. Comdr. Russell F. Becker, Oak Park, Ill. (Bowman Dairy Co., Chicago, Ill.); J. A. Vichness, Brooklyn, N. Y.

Also: PC J. M. Finlayson, Cheraw, S. C.; Ens. D. G. Fulton, Savannah, Ga. (Southern Securities Corp.); Lt. Herman Gronauer, Memphis, Tenn. (Wurzburg Bros.); Lt. (j.g.) W. E. Harber, Carthage, Mo.; Lt. R. V. Hencel, Kirkwood, Mo. (Gereke-Allen Carton

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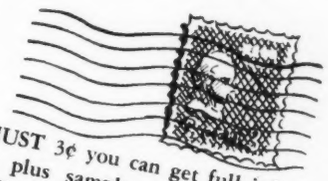

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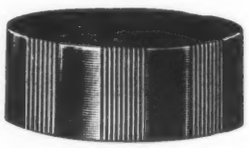

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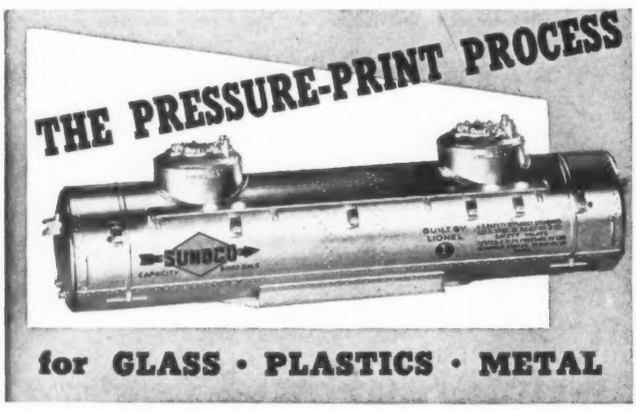

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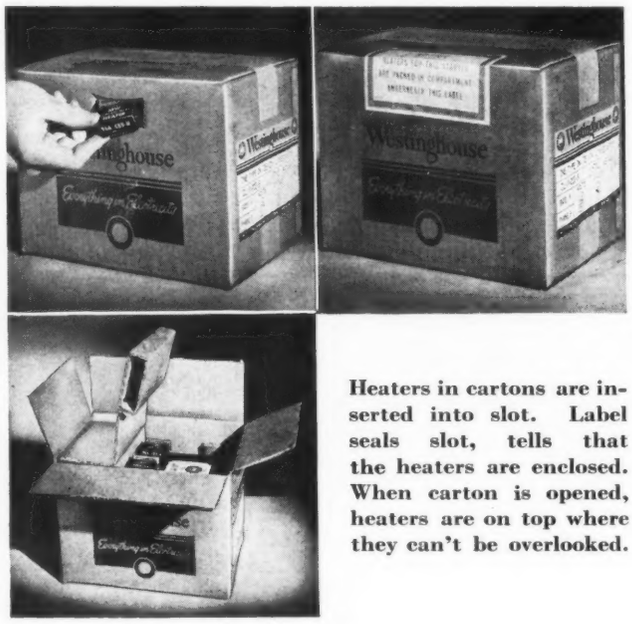

Heaters in cartons are inserted into slot. Label seals slot, tells that the heaters are enclosed. When carton is opened, heaters are on top where they can't be overlooked.

Before the use of this slot idea, previous practice necessitated the opening and re-sealing of the assembly-line pack to assure the correct number of heaters. This new packaging method, eventually to be adopted for all small A-C control apparatus, also speeds up shipping service and provides a neater package.

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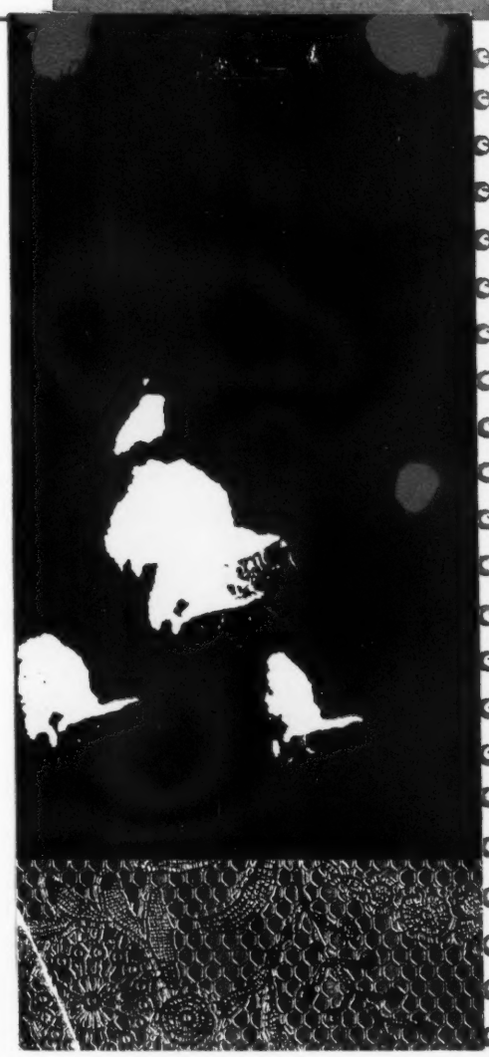

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MANUFACTURERS REPRESENTATIVES—Number of territories open for line of screw and vacuum caps, metal and plastic—established manufacturer expanding markets. Must have regular contacts with users of closures. Write Box 639, Modern Packaging.

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MODERN PACKAGING ADVERTISERS

JANUARY 1948

ABC Packaging Machine Corp... 161
Agency—The L. W. Ramsey Adv. Agency

Acme Paper Box Co..... 131
Agency—Newby & Peron, Inc.

Ajax Box Co., The..... 27
Agency—Gourfain-Cobb Adv. Agency

Aluminum Seal Co..... 196
Agency—Fuller & Smith & Ross, Inc.

American Can Co..... 15
Agency—Young & Rubicam, Inc.

American Coating Mills..... 19
Agency—Carter, Jones & Taylor

American Paper Goods Co., The. 189
Agency—Platt-Forbes, Inc.

Anchor Hocking Glass Corp.....16, 62
Agency—The Griswold-Eshleman Co.

Anderson Bros. Mfg. Co..... 156
Agency—Cummings, Brand & McPherson

Arabol Mfg. Co., The..... 12
Agency—Doyle, Kitchen & McCormick, Inc.

Armstrong Cork Co..... 44
Agency—Batten, Barton, Durstine & Osborn, Inc.

Ball Brothers Co....Inside Back Cover
Agency—Applegate Adv. Agency

Bareco Oil Co..... 160
Agency—Gibbons Adv. Agency, Inc.

Beck Machine Co., Charles..... 162

Bemis Bro. Bag Co..... 133
Agency—Gardner Adv. Co.

Brooks & Porter, Inc..... 135
Agency—Hirshon-Garfield, Inc.

Burt Co., Inc., F. N..... 123

Cady & Co., E. J..... 157
Agency—Robert A. Gallagher

Cameo Die & Label Co..... 148
Agency—Shaw Associates

Celanese Plastics Corp..... 53
Agency—Ellington & Co. Inc.

Central Fibre Products Co., Inc. 180
Agency—Cruttenden & Eger

Central States Paper & Bag Co.. 34
Agency—Padco

Chambers-Storck Co., Inc..... 152
Agency—Freiwald & Coleman

Champlin Co., Inc..... 159
Agency—O. S. Tyson & Co., Inc.

Chicago Carton Co..... 20
Agency—Evans Associates Co.

Classified..... 192

Cleveland Container Co., The... 185
Agency—The Nesbitt Service Co.

Commerce Oil Corp..... 155
Agency—Reinhold C. Ferster Adv. Co.

Consolidated Packaging Machinery Corp..... 181
Agency—Baldwin, Bowers & Strachan, Inc.

Container Equipment Corp..... 193
Agency—Jos. S. Vogel & Co.

Continental Can Co..... 42
Agency—Batten, Barton, Durstine & Osborn, Inc.

Crawford Co., John W..... 180

Creative Molded Products Co.... 179

Creative Printmakers, Inc..... 171

Crown Cork & Seal Co..... 28
Agency—Speed & Co., Inc.

Crown-Mark Paper Corp..... 31
Agency—Wendell P. Colton Co.

Dewey & Almy Chemical Co..... 145

Diamond Straw & Machine Corp. 172

Diffenbaugh Co., The P. H..... 149

Dobeckmun Co., The..... 143
Agency—Fuller & Smith & Ross, Inc.

Dodge Cork Co., Inc..... 10
Agency—Foltz-Wessinger, Inc.

Driscoll & Co..... 161
Agency—Burlingame-Grossman

DuPont Cellophane..... 43
Agency—Batten, Barton, Durstine & Osborn, Inc.

Eastern Craft Co., Inc..... 155

Eastman Kodak Co..... 147
Agency—J. Walter Thompson Co.

Einson-Freeman Co., Inc..... 6
Agency—L. E. McGivena Co. Inc.

Elgin Mfg. Co..... 171

Empire Can Corp..... 180

Facile Corp..... 55
Agency—Ben Lewis

Farrington Machine Co., Inc.... 69
Agency—Sutherland-Abbott

Ferguson Co., J. L..... 39
Agency—MacDonald-Cook Co.

Filler Machine Co., Inc..... 165
Agency—Packard Adv. Agency

Fitchburg Paper Co..... 60
Agency—Arthur M. Hillery

Food Machinery Corp..... 175
Agency—Van Auken & Ragland

Frazier & Son..... 155
Agency—Gallard Adv. Agency

Freedman & Sons, Leonard..... 45

Gardner-Richardson Co., The...22–23
Agency—Stockton, West, Burkhart, Inc.

Gaylord Container Corp..... 57
Agency—Oakleigh R. French & Associates

Gibbs-Brower Co., Inc..... 47

Goodrich Chemical Co., B. F.-Geon..... 7
Agency—Griswold-Eshleman Co.

Goodyear Tire & Rubber Co., Inc..... 11
Agency—Kudner Agency, Inc.

Gutmann & Co., Ferdinand..... 186
Agency—Louis M. Cottin

Harcord Mfg. Co..... 169

Hayssen Mfg. Co..... 153
Agency—Frederic T. Wurl

Hazel-Atlas Glass Co..... 29

Heat Seal-It Co..... 152
Agency—M. L. Beresin

Heekin Can Co., The..... 64
Agency—Midland Adv.

Heinrich, Co., H. H..... 188
Agency—Rea, Fuller & Co.

Hess & Barker..... 157
Agency—Sommers-Davis, Inc.

Hotel Strand..... 160
Agency—Atlantic Coast Resort & Hotel Pub. Bureau

Hudson-Sharp Machine Co..... 184
Agency—Jack C. Wemple

Industrial Magazine Service..... 56

Industrial Steel & Fibre Ltd.... 186

Ivers-Lee Co..... 50
Agency—Kenyon-Baker Co.

Johnson Machine Works, Inc. A. 21

Jones & Co., Inc., R. A..... 5
Agency—The Keelor & Stites Co.

Kimberly-Clark Corp..... 30
Agency—Foote, Cone & Belding

Kupfer Bros Co..... 191

Lansky Die Cutting Co..... 162
Agency—Chelsea Adv. Art Service

Lusteroid Container Co., Inc.... 177
Agency—Fred H. Ebersold, Inc.

Lynch Corp..... 58
Agency—John A. Wagner, Inc.

Closures that women can open

ALUMINUM SEAL COMPANY
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SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA

Mack Molding Co., Inc. 9
Agency—George Homer Martin

Maharam Fabric Corp. 164
Agency—M. J. Jacobs, Inc.

Manhasset Machine Co. 168

Markem Machine Co. 187
Agency—The Callaway Associates

Mason Box Co. 65
Agency—Howard Wesson Co.

Mead Board Sales, Inc. 38
Agency—Gray & Rogers

Midwest Foil Co. 59
Agency—W. J. Smith Co.

Milprint, Inc. 8
Agency—G. Willard Meyer Co.

Minerva Wax Paper Co. 176
Agency—H. M. Klingensmith Co.

Modern Containers Co. 182

Modern Packaging Encyclopedia 49

Monsanto Chemical Co. 198
Agency—Gardner Adv. Co.

Mosstype Corp. 181
Agency—D. E. Rothschild Adv. Agency

Multi Color Graph Corp. 190

Munson Bag Co., The 165

National Adhesives .....
.....**Inside Front Cover**
Agency—G. M. Basford Co.

Nashua Gummed & Coated Paper Co. 70
Agency—Sutherland-Abbott

National Can Corp. 54
Agency—Doyle, Kitchen & McCormick, Inc.

National Paper Box Mfrs. Ass'n. . 167
Agency—Howard Wesson Co.

National Rubber Machinery Co. . 67
Agency—The Griswold-Eshleman Co.

New Jersey Machine Corp. 61
Agency—Diedrich Adv. Service

Niemand Bros., Inc. 172

Old Dominion Box Co., Inc. 17
Agency—Howard-Wesson Co.

Oliver Machinery Co. 177
Agency—Dean-Hicks Co.

Owens-Illinois Glass Co. 136–137
Agency—J. Walter Thompson Co.

Oxford Paper Co. 48
Agency—Kudner Agency, Inc.

Package Machinery Co. 124
Agency—John O. Powers Co.

Packard Container Corp. 174

Packer Machinery Co. 166

Palm Fechteler & Co. 184
Agency—I. H. DuFine Co.

Palmer, Inc., Frank D. 163
Agency—Harold Hitchock Associates

Pearlstone Co. 182

Perfektum Products Co. 158
Agency—Givaudan Adv., Inc.

Peter Partition Corp. 170
Agency—The Irving Davis Co.

Peters Machinery Co. 173

Phoenix Metal Cap Co. 1

Plastic Artisans, Inc. 166

Plastic Film Corp. 168
Agency—John A. Cairns & Co., Inc.

Plax Corp. 14
Agency—The Charles Brunelle Co.

Pneumatic Scale Corp., Ltd. 151
Agency—Alley & Richards, Inc.

Potdevin Machine Co. 153

R. C. Can Co. 25
Agency—Eggers-Rankin Adv. Service

Redington Co., F. B. 3
Agency—Kuttner & Kuttner

Rhinelander Paper Co. 37
Agency—Frank C. Nahser, Inc.

Richford Corp. 149
Agency—F. M. Metcalf Adv. Agency

Riegel Paper Corp. 24
Agency—W. L. Towne

Rock Mfg. Co. 148

Rodgers Co., Inc. George G. 179

Rosebud Mfg. Co. 36

Roto Bag Machine Corp. 33

Rowe Pkg. Co., Ltd. 194

Rowell Co., Inc. E. N. 63

Seal-Spout Corp. 173
Agency—Mercready & Co.

Shellmar Products Corp. ..**Back Cover**
Agency—John Stover Adv. Agency

Siris Products Co., A. J. 52
Agency—Ehrlich & Neuwirth, Inc.

Smith Co., The S. K. 66

Standard-Knapp Corp. 183

Stokes & Smith Co. 18
Agency—R. E. Lovekin Corp.

Sun Tube Corp. 35
Agency—Doherty, Clifford & Shenfield, Inc.

Sylvania Div., American Viscose Corp. 141
Agency—J. M. Mathes, Inc.

Taber Instrument Corp. 142

Traver Corp. 46
Agency—Jewell F. Stevens Co.

Trilsch Co., Oscar 158
Agency—Chelsea Adv. Art Service

Troth, Bright, Page 40

Tupper Corp. 26
Agency—Chambers & Wiswell, Inc.

Twitchell, Inc., E. W. 178
Agency—R. E. Lovekin Corp.

United Board & Carton Corp. 13
Agency—Gotham Advertising Co.

Verner & Co., Inc., B. 188

Visking Corp., The 51
Agency—Weiss & Geller, Inc.

Warner Brothers Co., The 139
Agency—DuPont & Cahalin, Inc.

Warren Plastics Corp. 190
Agency—Certified Adv. Agency

Watson-Standard Co., The 68
Agency—Cabbot & Coffman, Inc.

Waxed Paper Institute 170
Agency—Howard H. Monk & Associates

Weinman Bros., Inc. 156
Agency—T. R. Bauerle Adv. Agency

West Carrollton Parchment Co. . 132
Agency—Kircher, Helton & Collett, Inc.

Western Carton Co. 176

Wirz, Inc., A. H. 41
Agency—Roland G. E. Ullman Corp.

Wrap-Ade Machine Co. 164

Zophar Mills, Inc. 174
Agency—Gunn-Mears Adv. Agency

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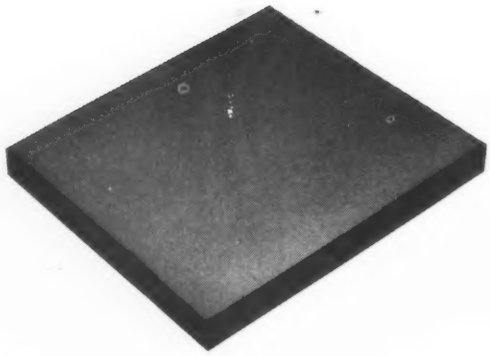

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